OCTOBER, 1965

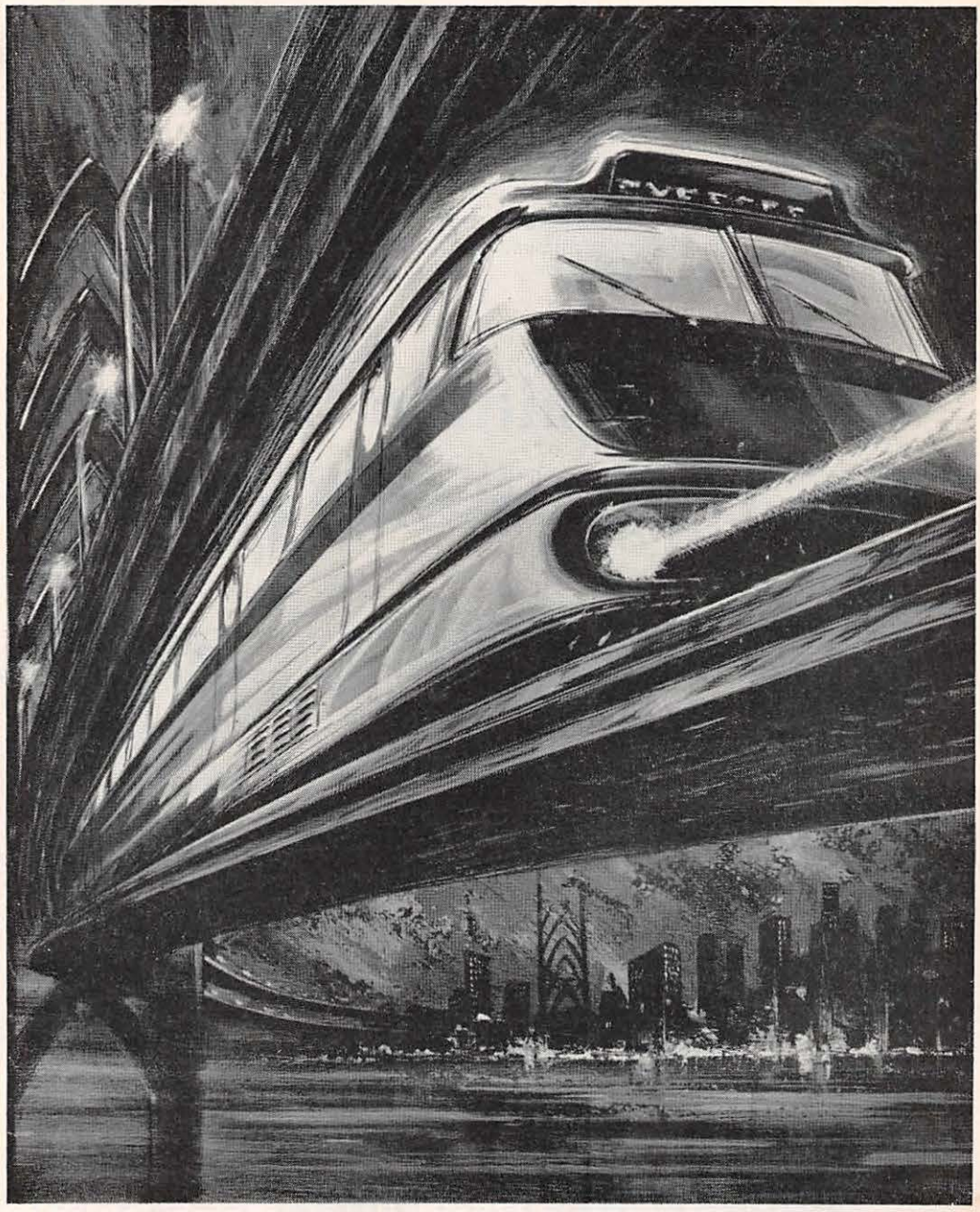
THE Signalman's JOURNAL

AAR Signal and Communications Section Considers Future

How Working Affects RRA Benefits

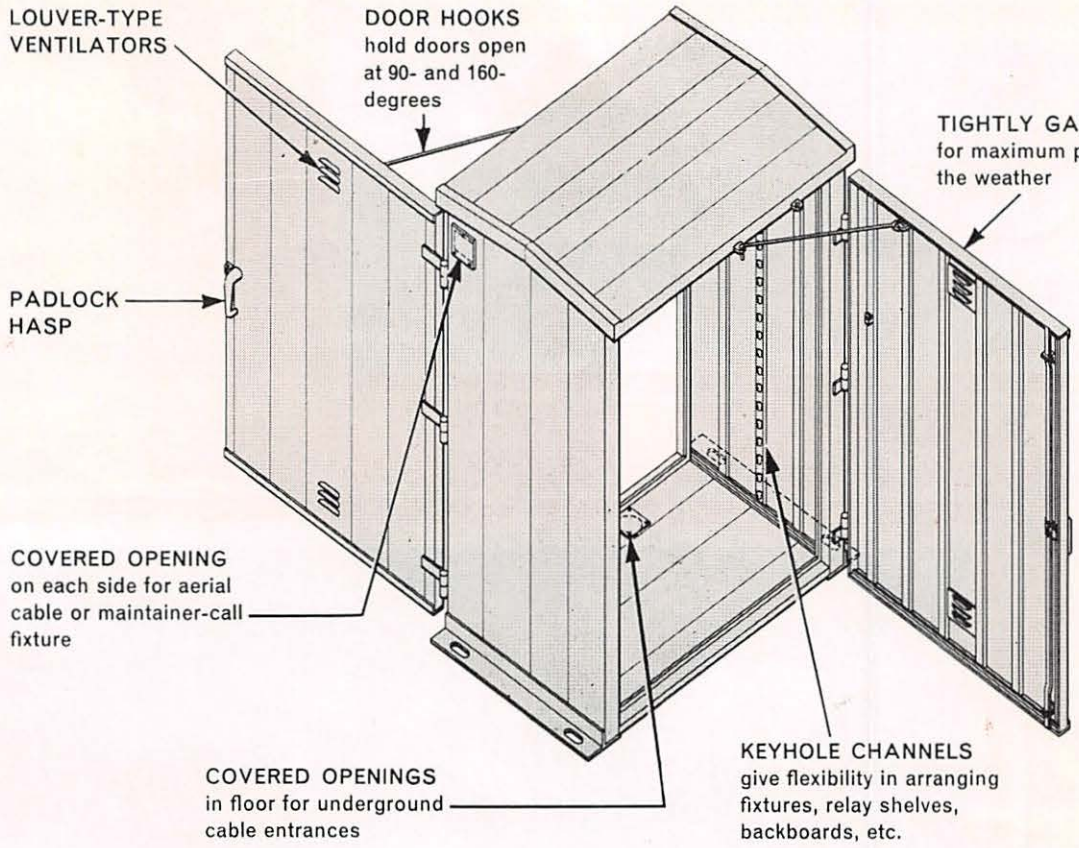
'New Railroads' Can Be Built Now

Automatic Train Operation



Cover Picture

An artist's sketch of the railroad of tomorrow which can be built and operated by technological techniques available today. Photo, courtesy US&S.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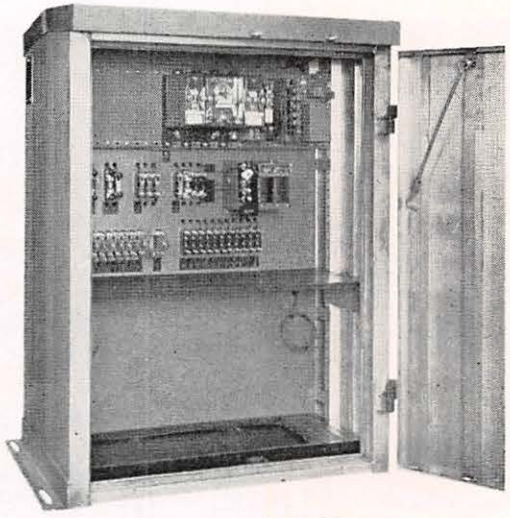

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ADDRESS CHANGE: B. of R.S. members or other subscribers should promptly advise the editorial office, 2247 Lawrence Ave., Chicago, Ill. 60625 if this magazine is coming incorrectly addressed or if they change their address. A Change of Address Form is printed in each issue for that purpose.

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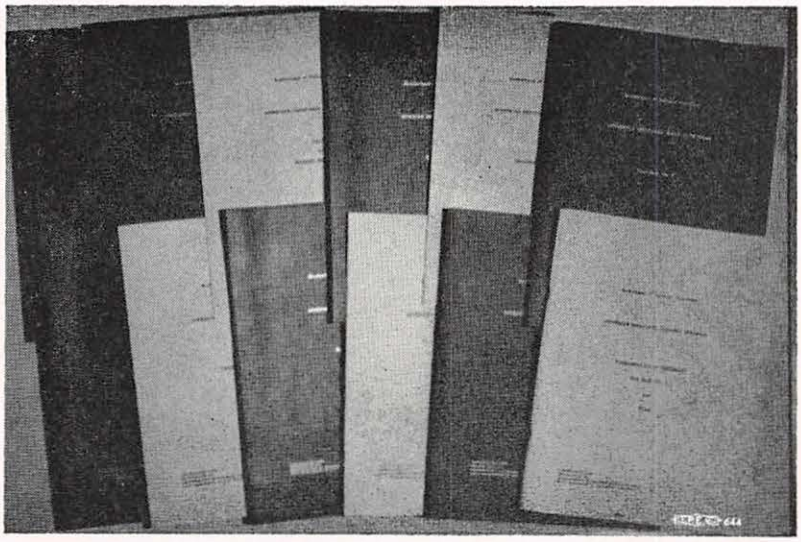

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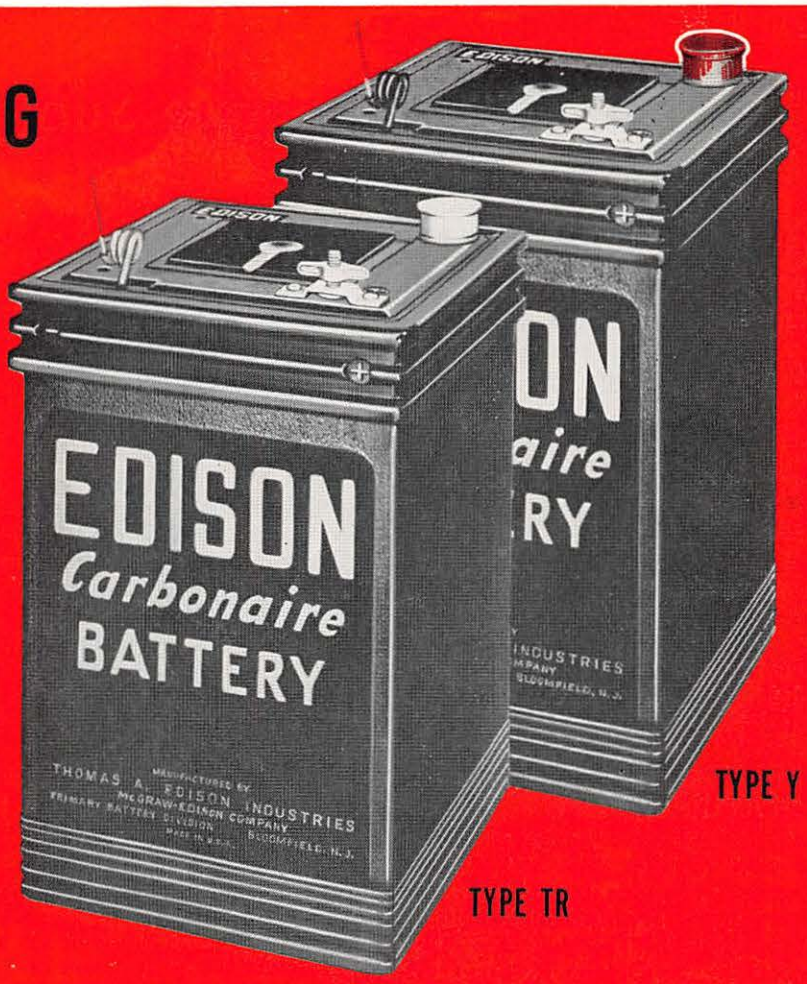

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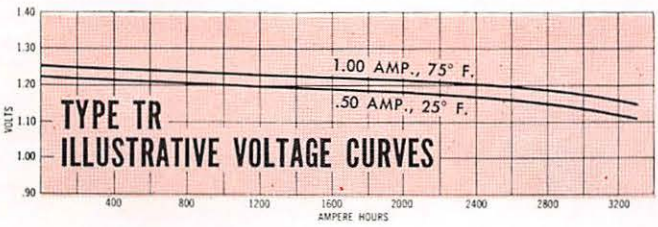

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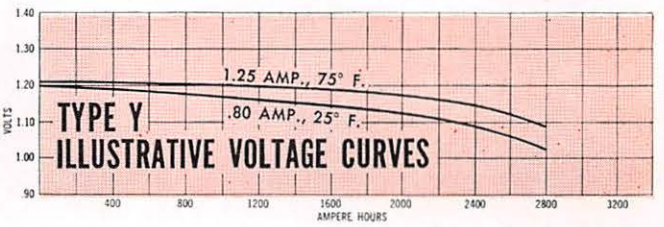

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Oregon League Submits Report

OUR BROTHERHOOD'S LEGislative Representative Leo E. Whorlow in a joint report of the Railroad Brotherhoods' Legislative League of Oregon recently advised of activities of the 53rd session of the Oregon State Legislature.

The Representatives pointed out that the report did not cover all legislation introduced but only bills affecting Railroad Labor and others of general interest to our members.

The Assembly convened on January 11 and adjourned on May 14. The League further pointed out that in the House there were 28 Democrats and 32 Republicans. The Senate had 19 Democrats and 11 Republicans.

Action taken by the Assembly was reported as follows:

H.B. 1198 repeals Oregon's full-crew law effective January 1, 1967. It also requires that injuries or damage to persons or property must be reported to the Public Utilities Commissioner. The bill was supported by the Oregon Railroad Association and opposed by the operating crafts. Both Houses passed the bill by a large majority.

H.B. 1298 would have prohibitied except as a necessary warning of danger, a person operating a railroad train or locomotive, within a city, to sound a horn, bell, gong or other warning device or cause any such device to be sounded. This measure was opposed by both the railroad and Railroad Brotherhoods. The bill was tabled.

H.B. 1756 was a measure to tax rail transport containers, which means all piggy-back business on railroads, which would seriously curtail business in the railroad industry. The bill was opposed by the railroads and Railroad Brotherhoods, and therefore tabled.

H.J.M. 16 would have memorialized Congress of the United States to repeal those portions of section 5 of the Act of August 12, 1958, Ch. 625 (72 Stat. 571), which deprive the states authority over discontinuance of passenger trains and services. The measure was tabled.

S.J.R. 27 provided for directions to the Public Utilities Commissioner of Oregon to participate in proceedings before the Interstate Commerce Commission to secure I.C.C. directions to railroads in Oregon. The measure passed the Senate but failed in the House.

H.J.M. 11. This measure asks Congress to provide that no road trainman or engineman can be required to work more than 12 hours without relief. This was at the request at R.R. operating crafts. The bill was tabled.

S.B. 110 would have made it unlawful for any person, partnership, firms or corporation to employ individuals in place of employes involved in a labor dispute. The bill was tabled in committee.

S.B. 139 would have prohibited any person who is confined in the Oregon State Penitentiary, the Oregon State Correctional Institution or an inmate of any state institution from performing labor in the construction of any state building. The measure was tabled.

H.B. 1144 is an unlawful employment practice for an employer to refuse to hire, dismiss or demote any individual because of his age if the individual is 25 years of age or older and under 65 years of age. The measure was buried in committee.

H.B. 1759 would have under certain circumstances given medical assistance to people over 65 years of age. The measure was buried in committee.

H.B. 1766 was a measure to prohibit an employer from requiring an employe to participate or contribute to any contract, which would include the Railroad Hospital Association as a condition of employment. The bill was tabled after the first hearing.

H.B. 1169 permits a student to be claimed as a dependent even if he makes more than $600 a year if his parents provide more than half of his support. The measure was approved.

H.B. 1207 refers to voters a four-cent a pack cigarette tax with one cent to go to the county and one cent to the city. The other two cents to go to the property tax relief account. The bill passed.

H.B. 1226 establishes a property tax relief account in the general fund — appropriates $25 million to same. Distributed on an assessed value basis, so every property in Oregon received the same millage reduction in his taxes. The measure was approved.

H.B. 1227 would have repealed the law relating to exemptions from real and personal property taxation for fraternal organizations. The bill was tabled.

H.B. 1709 alters head of household provisions so single person with dependents receives lower tax rate similar to that received by married individuals filing joint return. Brings Oregon income tax law into accord with federal law. The measure passed.

Consumer Protection

S.B. 1 provides that a minimum of $25 and a maximum of $250 a month shall be exempt from garnishment. This bill was supported by all labor, passed both Houses and signed by the Governor.

S.B. 84 relating to protection; defining and prohibiting unfair methods of competition and unfair or deceptive acts or practices. Passed both Houses and signed by the Governor.

H.J.R. 50 would create an interim committee on consumer protection to study and investigate unfair and fraudulent commercial trade practices. The measure was tabled.

State and Federal Affairs

H.B. 1001 extends coverage of workmen's compensation to an additional 200,000 workers, raises benefits to injured workmen 25½ percent, allows private insurance companies to write workmen's compensation. The measure passed both Houses.

H.B. 1049 is a comprehensive revision of the law relating to election and operation of Oregon's party organization. This bill passed both Houses.

H.B. 1105 permits training through the Manpower Development and Training Act of workers who have lost their jobs to automation. Passed both houses.

H.B. 1130 was a measure to permit any person entitled to vote in a statewide election on the day of election, time off from employment without any deduction of wages to vote if his working hours would not allow him such time. The bill was tabled in committee.

H.B. 1290 provides that the Oregon State Primary Election will be held on the fourth Tuesday in May of 1966 and biennially thereafter. The measure passed.

H.B. 1381 requires the director of

veteran's affairs to cancel existing balance of loan when the property used for security was damaged in excess of balance by the 1964 floods if the borrower so applies. This bill was approved.

H.B. 1661 provides for suspension of driver's license where defendant fails to appear for hearing and no bail has been posted. The measure was approved.

Education

H.B. 1020 called the "Big Ed Bill" is a complete recodification of Oregon's education law. The measure passed.

H.B. 1099 is designed to upgrade the standards of private vocational schools and stimulate their contribution to Oregon's economy, particularly in the field of training people for more technical employment. The bill passed.

H.B. 1169 reorganizes and broadens the apprenticeship training program to include trainees and allows additional industries to take advantage of the program. It is an important step in filling the demand for more trained and skilled

workers. This measure was approved.

H.B. 1307 appropriates $100,000 and establishes a program for special education for "disadvantaged children" in Portland. The bill passed.

S.B. 414 and S.J.R. 31 are companion measures that provide for filling the office of superintendent of public instruction and for allowing the people to vote on whether the office should be elective or appointive. This bill was approved.

S.B. 55 provides that a paid lobbyist shall register with the Secretary of State, giving his name and address, by whom he is employed, what legislation or areas of interest the registrant is engaged to support or disapprove, and a written authorization to act as a lobbyist. The bill passed.

S.B. 225 provides several improvements in the local budget law including additional protection of the citizens "right to know" by supplementing the procedure for publication of local budgets. This measure passed.

"Generally speaking," the report decalred, "we fared much better than other segments of organized labor, inasmuch as we were successful in killing all detrimental legislation that would have seriously affected Railroad business and further the reduction of railroad employment."

The Railroad Brotherhoods' Legislative League of Oregon is made up of representatives from the Brotherhood of Railroad Signalmen; Brotherhood of Maintenance of Way Employes; Brotherhood of Railway and Steamship Clerks; Freight Handlers, Express and Station Employes; and Sheet Metal Workers.

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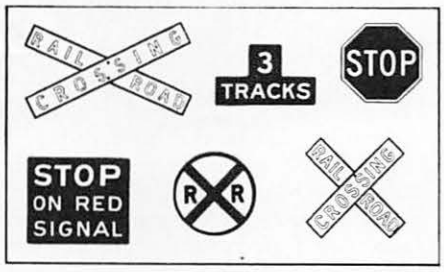

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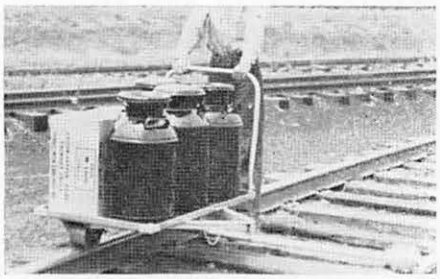

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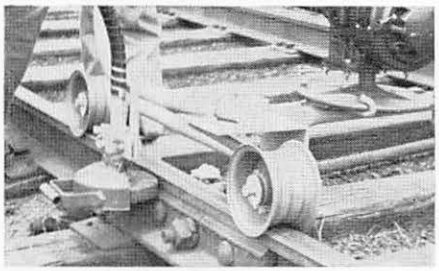

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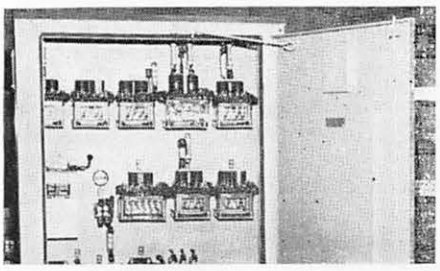

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IF YOU LIKE WHAT CONgress has been doing — passing progressive laws to help working people and the nation—here's a tip: It would be a smart idea to do what you can now to make sure Congress goes right on enacting needed legislation.

And what you can do now is give a buck to COPE, the AFL-CIO Committee on Political Education. Your dollar, united with other dollars contributed to COPE by union members, will be used to help re-elect in 1966 the liberal congressmen who have been going to bat for you this year.

This is the only assignment for dollars contributed to COPE, to help finance liberal candidates—our friends—in their campaigns.

Is it worth a buck? Figure it out for yourself on the basis of the achievements of the liberal 89th Congress. Here is part of its record:

"RIGHT TO WORK" REPEAL —As this issue went to press, Senate action was pending on repeal of Section 14(b) of the Taft-Hartley Act, the section authorizing state "right to work" laws. The House already had voted to repeal 14 (b). Repeal would wipe the existing 19 state open shop laws off the books. In the House 48 of the 51 new liberals your COPE dollars helped elect in 1964 voted for free collective bargaining and an end to union-busting "right to work."

MEDICARE — The 20-year battle to provide health care for the elderly under Social Security has been won. It received overwhelming support from the Senators and Representatives your COPE dollars aided. Some 20 million Americans over 65 will benefit from the program. Hospital bills are automatically covered, and for $3 a month the elderly also will get coverage for doctors' fees. One example of how medicare will help the elderly: A broken leg takes months to mend. In one typical case the total costs were $2,481 for hospital care, doctors' fees, X-rays and other charges. With the basic hospital coverage, plus the optional $3 a month program, you would only have to pay $243 instead of nearly $2,500.

SOCIAL SECURITY — The entire Social Security program was liberalized and improved. All benefits were boosted seven percent retroactive to Jan. 1, 1965, for those receiving the minimum monthly payment. After next January 1, family benefits will go as high as $368 a month. Widows, the disabled and dependents will receive better pension provisions.

EDUCATION — The 89th Congress took a giant step toward assuring that your children will get the best possible education. It passed the first major program of federal aid to public schools, bolstering almost every school system in the nation. The $1.3 billion program will provide textbooks, improve school libraries, set up community-wide educational centers, improve educational research and training, and strengthen state departments of education. Its basic thrust is toward helping children from poor families get the education they need to break out of the poverty cycle.

HOUSING—There's a new twist in housing, aimed at moving faster toward the goal of decent dwellings for all Americans. The program passed by Congress provides rent supplements for low-income families and individuals. These will pay the difference between the full rent of a public housing apartment and 25 percent of the income of the family occupying it. Example: If a family earns the poverty-level income of $3,000 and pays $900 a year rent, the government will grant a rent subsidy of $150.

VOTING RIGHTS — Thousands of Negroes in hard-core areas throughout the south already have responded to the historic voting rights law enacted recently by registering to vote. The long-run effect will be emergence of an effective liberal movement in states now retarded by obsession with the race issue. The new law protects the right to register and vote by sending federal registrars into areas where patterns of discrimination exist. It suspends literacy tests as a qualification for voting in any state or political subdivision where less than 50 percent of the voting-age population was registered and voted last November.

TAXES — Excise taxes that burdened consumers for years were slashed by the 89th Congress. Estimated savings for the average American family: $57 a year.

PUBLIC WORKS—As this article was written, a $4.3 billion job-creating public works measure was in House-Senate conference. It will mean construction and repair of needed community facilities in many areas of the country.

We've described just some of the major legislation Congress has enacted. In addition, it created a Department of Housing and Urban Development to coordinate an all-out attack on the problems of big cities — transportation, education, sanitation, housing. It passed legislation providing aid to the poverty-ridden Appalachia area; improved the manpower training act; enacted drug controls. It is expected to pass water and air pollution control programs.

This Congress has been the most liberal and the most productive in decades, and your COPE dollar helped make this possible.

One thing is certain: Your foes in politics are building huge warchests to defeat liberals in 1966 and stop the flow of progressive legislation. The extremist John Birch Society is shooting for a $12 million political kitty. Other right wing groups will go all out financially and organizationally. Conservative groups like AMPAC and BIPAC, the medical and businessmen's political action organization, are gearing up for next year. They'll have more money and more manpower than ever.

You can help our liberal friends in Congress withstand the conservative and right wing attack by giving your dollar to COPE now.

Notice

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The retirement party for General Chairman F. E. Bush will be held at the Claridge Hotel at 18th & Locust St. in St. Louis, Mo. on Saturday, October 30.

If you have not already done so please return your questionnaire. Make your reservations and contributions as soon as possible.

An informal reception beginning at 6 p.m. will precede dinner. Ed.

YOUR WASHINGTON Reporter

Eugene C. Zack

THE 89TH CONGRESS, WHICH President Johnson has called "the greatest of them all," has at least one failure in its record, and it's a good thing for all of us that it has.

Despite its earlier hopes of adjourning by Sept. 1, the legislation-minded Congress failed to meet this target. Hard and effective work by its committees resulted in an unusually large volume of major bills being cleared for floor action in the closing days even though a precedent-setting legislative record already had been established.

As a result, Congressional leaders, nudged on by President Johnson's seemingly insatiable appetite for the enactment of still more Administration-backed measures, had to keep Congress working longer than originally planned.

The general public and the "Great Society" will benefit considerably from the legislation which was passed as a result of this extension of the time for adjournment.

Several Measures Still To Be Considered

Among the many measures still being considered beyond the original adjournment date were many labor-backed liberal legislative programs that would add materially to the already outstanding record of the 89th Congress.

These included a major "Great Society" push on behalf of education. The House, by a vote of 367 to 22, passed a trail-blazing bill to aid higher education by providing a five-year program of scholarship grants to needy but promising college students, federally guaranteed loans to middle-income students and increased federal aid for construction of university buildings. The Senate bill raised the amount authorized for the program to $5.5 billion over the five-year period and provided for the establishment of a national teacher corps to work in poverty-stricken districts. At this writing, the two chambers were ironing out differences in the two versions.

The fate of the most important legislation affecting labor—the Administration-backed repeal of Taft-Hartley's obnoxious Section 14(b)—was clouded somewhat by threats by some Republican Senators to "filibuster" against the bill. However, few doubted that the Senate would ultimately approve repeal of the 18-year old provision which brought enactment of compulsory open-shop ("right to work") laws in 19 states. Earlier the House had approved repeal by a 221-203 margin.

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A new cabinet agency most vital to the nation's cities, has been established with the enactment by Congress of a bill establishing a Department of Housing and Urban Development. The new department, which is expected to provide many benefits to the nation's urban population, was originally proposed by the late President Kennedy but legislation for its establishment was defeated in the House three years ago. This department will coordinate housing and mass transit programs and deal with other urban problems.

Major — and long overdue — reforms of the nation's immigration laws also were made possible by the longer session. Main feature of the new immigration policy is the substitution of ceilings for the old "national origins" quota system, which labor had long criticized as discriminatory.

One of the strongly-backed Administration measures which stood in uncertain position at this writing was a bill to provide home rule for the District of Columbia. Similar measures have passed the Senate repeatedly in previous Congresses but always died when the House Rules Committee refused to send the legislation to a vote.

President Johnson had urged action at this session, and backers of a discharge petition which would free the bill from Rules Committee jurisdiction rushed against adjournment to get 218 signatures needed to bring the measure to the floor.

The Administration suffered a modest setback in the field of foreign aid, when a compromise authorization bill for $3.3 billion of expenditures in the current fiscal year was sent to the White House for signature. The President had asked $100 million more, and the AFL-CIO said that he should have asked for double the amount he did, so the program could more effectively combat communism.

F.E.C. Bills to Floor Under Rules Reform

The House Rules Committee, graveyard for many pieces of legislation which the conservative majority members of this powerful body oppose, tried to throw a closing-days roadblock in front of two highly-important bills sponsored by Rep. Wright Patman (Dem., Tex.) which would split up the vast du-Pont financial empire that controls the struck Florida East Coast Railway.

Patman countered by introducing resolutions to bring his two bills directly to the House floor, under a

rules reform passed by House liberals last January. Whether or not Patman's move would succeed in getting the bills through the House before Congress adjourned was not determined as this was written.

The Patman legislation, strongly supported by railroad labor, would bring under the Bank Holding Co. Act the billion-dollar duPont Estate which owns the struck railroad. In effect, it would force the estate to sell out either the great chain of 31 Florida banks it controls or its non-bank companies, including the FEC.

Supporters, believing that the bills would clear the House early next year if not in this session, used the closing days to begin the fight for Senate passage next session. Sen. Wayne Morse (Dem., Ore.) combined the two Patman measures into one bill, S. 1418, and introduced it with six members of the Senate Banking Committee as co-sponsors.

Hartke Opposes Appointment of Military to Civilian Posts

Sen. Vance Hartke (Dem., Ind.) continued his campaign against the steady increase in appointments of military men to government civilian posts. His latest blast was leveled at the Federal Aviation Agency, which he had attacked before on similar grounds.

Hartke expressed concern when FAA Administrator William F. McKee informed him that Brig. Gen. Jewell C. Maxwell of the Air Force has been named director of the FFA's supersonic transport program. Maxwell succeeded Gordon Bain, a civilian, who resigned to return to private business.

"The supersonic transport is being developed as a venture in civil, not military aviation," Hartke told McKee, who is himself a retired Air Force general. It should not, he made it clear, be put in the hands of another general.

"The increased influence of the military mind in America is a clear warning of ultimate militarization of the government, loss of civilian control, and beginning of a totalitarian state," Hartke warned.

Live A Little Longer

Fighting Cancer

By Dr. William A. Sawyer
IAM Medical Consultant

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Why do people die of cancer? They don't always have to. They die because they do not always see the right doctor in time.

Also, perhaps, they do not have the facts about cancer. Having the facts gives added protection. Knowing the early signs of cancer and being willing to seek early help may make the difference between life and death.

A too-late diagnosis, according to the American Cancer Society, will cause some 92,000 deaths from cancer in the U.S. in 1965. Today only one out of three cancer patients is being saved. One out of two could be saved and perhaps even more. Ten years ago it was only one out of four cancer patients saved.

But it is the same story over and over — the patient did not get to the doctor in time. By not heeding cancer's danger signals, or not having a regular check-up, lives are lost needlessly. New and improved methods of diagnosis and treatment can save more people.

The President's proposed program to be available across the country, for complete early diagnosis and treatment, will give a chance for more life saving.

But don't forget that a large proportion of increased number of cured cancer patients will always be due in the first instance, to the patient's own action. They have to see their doctors promptly when symptoms appear.

Let us take a few examples to prove the value of early diagnosis —the difference between finding and treating cancer when it is localized or confined to its original spot and when it has spread to other regions of the body.

Cancer of the uterus (female), for instance, has a survival rate of 81 percent when localized and only 46 percent after it has spread.

Cancer of the breast is 82 percent curable before it spreads, and only 47 percent after it gets out of bounds.

Cancer of the large bowel is almost 70 percent curable when confined, but only 34 percent when it has spread. Other locations are similar.

These figures strikingly emphasize the need for greater knowledge about cancer and for taking prompt action. The first safeguard against death from cancer is to have an annual checkup by a doctor who is skillful in discovering cancer.

The second safeguard is to be alert to cancer's seven danger signals, that may appear between check-ups. (Free copies of cancer's danger signals and pamphlets on how best to help protect oneself from death from cancer are available from local units of the American Society. Look up CANCER SOCIETY in the phone book. You can get them also from the Society's headquarters—219 East 42 St., New York City 10017.)

It is said that knowledge about cancer can do more to control the disease today than anything else. We should apply and use education for all it is worth until research comes up with a sure cure. Do all you can to avoid being one of the 92,000 who will probably die this year because of failure to act in time.

The best insurance against cancer is knowledge, and your decision to give your doctor a chance to make an early diagnosis, followed by prompt treatment.

Notice

Detailed specifications and application data for the full line of Plymouth electrical insulating, protective, and color-coding tapes are contained in a new 16-page catalog available free from plymouth Rubber Company, Inc., Canton, Mass.

Included in the illustrated multicolor catalog are electrical characteristics, physical characteristics, dimensions, and packaging data for Plymouth's well-known Slipknot-brand friction and plastic tapes, as well as Plymouth's rubber tapes, color-coding tapes, filler tape, neoprene tapes, ozone-resistant tapes, anti-corrosion pipe-wrapping tapes, vulcanizing tapes, and special telephone and utility tapes.

Free copies of the new Plymouth electrical tape catalog are available directly from Plymouth Rubber Company, Inc., Tape Division, 104 Revere St., Canton, Mass. 02021.

Automatic Train Operation

The following article was taken from a paper presented earlier this year by Crawford E. Staples, senior consulting engineer for the Union Switch and Signal Division, Westinghouse Air Brake Company.

Mr. Staples discussed work being done and advances being made towards automatic train operation. He further emphasized that these new developments are feasible, economically attractive, and available today.

TO BRIEFLY REVIEW PRESent train control systems and techniques as a background for a description of new improved systems and apparatus, Mr. Staples pointed to the following:

- Most rail transit systems today use wayside signals and trip stops to control train movements. This type of operation also requires instrument cases and insulated joints and may require massive impedance bonds.

- Cab signaling and automatic speed control is installed on the Stockholm transit system, where for many years this apparatus has proved to be highly successful.

- Almost all transit signaling today is controlled by track circuits with the circuit length limited by insulated joints, as required.

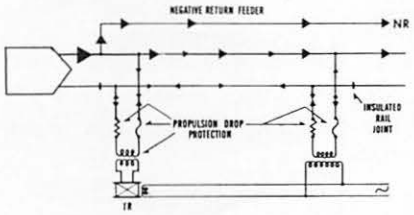


Fig. 1—Single Rail Track Circuit

In most cases, single rail track circuits are used for economy. (See Fig. 1) But since the propulsion return current is carried in a single rail, the track circuit must be protected against the propulsion voltage drop, and additional negative return feeders may be required. Broken rail protection cannot be readily provided.

Double rail track circuits (Fig. 2) make use of both rails for propulsion return, and can be safely made much longer. Where longer track circiuts can be used, they may be more economical despite the cost of impedance bonds, because of the saving in the number of track circuits and the saving in return feeders.

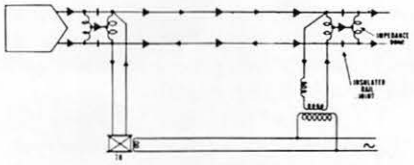


Fig. 2—Double Rail Track Circuit

Insulated rail joints, necessary in present systems, are a major source of failures and maintenance cost. On one rail transit property, they account for about 25 percent of all signal failures. Maintenance costs may average as much as $100 per year per insulated joint due to insulation replacement, rail end trimming, and hand surfacing. Original installation costs may run several times that in welded rail territory due to the anchoring required.

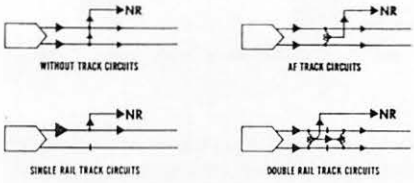


Fig. 3—Negative Return Feeders

Power and signal people recognize the importance of minimizing propulsion return voltage drop to obtain maximum acceleration and speed required to meet tight headway schedules, and to minimize electrolysis and interference to signal circuits.

Crossbonding to other tracks or to structure reduces the drop. Each additional rail is much more than equal to a million circular mil copper feeder.

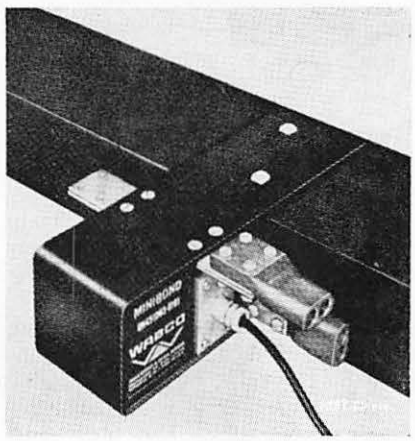


Fig. 4—Minibound

When considering new rail or power distribution programs, overall costs may be reduced by simultaneously considering new signaling facilities. One midwestern mainline railroad has found it practical to include the cost of installing modern signaling circuits in the overall costs of a continuing program of installing welded continuous rail.

Installation and maintenance of a rail transit signal system is tough, particularly between stations in a subway or on an elevated line. Wayside signals, trip stops, instrument cases, and other devices require working space, protection from hazards, and traveling time for maintainers to inspect all apparatus over the system. How can we reduce maintenance time and improve performance? How can we reduce costs of installation and maintenance?

The solution is our new audio frequency track circuit, cab signaling, and speed control system which eliminates, between stations or interlockings, all of those items which require the most maintenance or the most difficult installation—insulated rail joints, wayside signals, trip stops, and instrument cases. This system permits centralized housing of control equipment at stations or interlockings, convenient to maintain and applicable to centralized traffic control. We know you can save money with this new system. One rail transit property just recently estimated a big saving in material and installation costs.

This new system, an integral part of automatic train operation, has been thoroughly and successfully tested on one of the major rail transit properties under heavy traffic conditions. It will soon be demonstrated on the San Francisco Bay Area Rapid Transit District. While new in concept and equipment, it uses time-proven principles.

The heart of the new system is the Minibond, a small impedance bond designed for use with audio frequency track circuits. Though weighing only 60 pounds, and one-tenth the size of a standard bond, it is capable of carrying 2000 amperes per rail continuously.

It may be mounted on the center or end of a crosstie, or may be inverted to mount on concrete. It is encapsulated, and is watertight.

A single Minibond and its connections are all that is required at each intermediate control location. As shown in Fig. 5, the center-tap

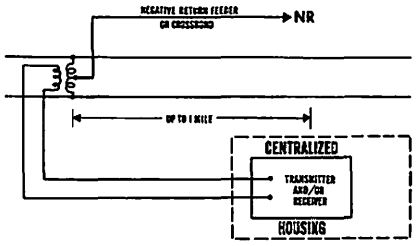


Fig. 5—Minibound Connections

on the track winding is used for cross-bonding or connected to the structure, making use of all rails for propulsion return. A pair of wires to the nearest centralized housing handles all controls. Centralized housings may be over two miles apart. This arrangement minimizes maintenance and fosters use of track maintenance equipment.

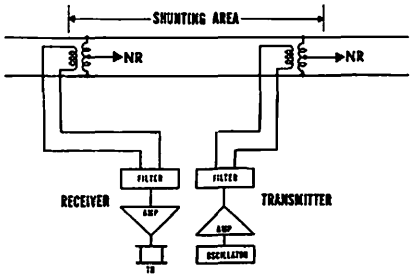


Fig. 6—Audio Frequency Track Circuit

The audio frequency track circuit (Fig. 6) consists of the rails between two Minibonds, a transmitter connected to one Minibond, and a receiver energizing a track relay connected to the other Minibond. Because of the relatively high impedance of the rails to audio frequencies of 2 to 6 KC, no insulated rail joints are required to limit the track circuit. The track circuit will not be shunted when a train is more than a few feet outside the Minibond locations. Where ballast is well maintained, audio frequency track circuits may be over 2000 feet in length, and still provide broken rail detection, adequate shunting, and protection from interference.

One transmitter location may feed two track circuits, one in each direction, at the same audio frequency. Otherwise, different frequencies must be used in adjoining track circuits and on parallel tracks to prevent mutual interference. There is a small overlap area at each Minibond, where a train will shunt adjoining circuits.

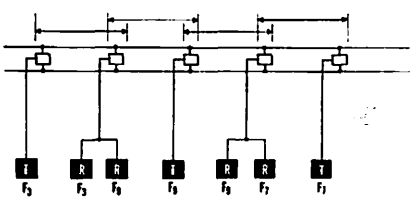


Fig. 7—Audio Frequency Assignments

The same principle is used for cab signaling. (Fig. 8) However, since the cab signal must operate in any track circuit, the same audio carrier frequency, about 1 KC, is superimposed on the rails throughout the system, and is coded or modulated at various rates to provide various commands, when required and permitted. Two cab signal audio frequency carriers may be coded alternately or independently to increase the number of commands.

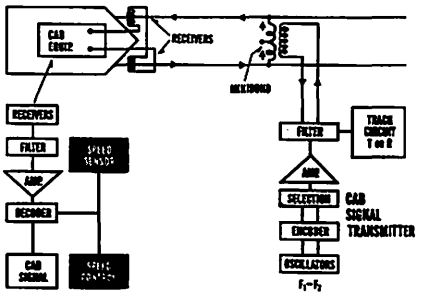


Fig. 8—Cab Signaling with Speed Control

When a train occupies a track circuit, the cab signal coded carrier is applied to the Minibond at the exit end if traffic conditions permit. The resultant current flowing through the axles of the train induces a voltage in the train carried receivers mounted over the rails ahead of the front axle.

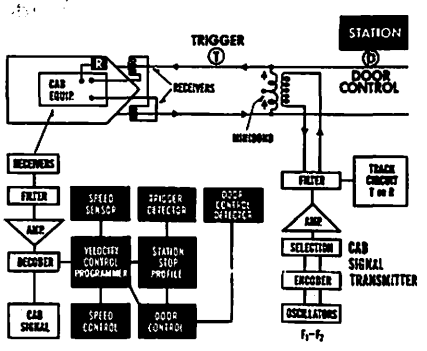


Fig. 9—Automatic Train Operation

The received signal is filtered, amplified, and decoded by equipment on the train to obtain suitable outputs, which may be used to provide cab signaling. The same outputs, in conjunction with speed-sensing devices provides speed control.

Here, shown in Fig. 9, we have the major step to automatic train operation. A train-carried station stop profile, in conjunction with wayside triggers, and a velocity control programmer, provides for automatic station stops. Other controls provide for station stop time, selective door opening and closing, train reversal, etc.

The entire system can be tied together by communication networks, employing high speed code systems, between the centralized housings and headquarters, where computers can be used to control the system. Voice communications can be selectively superimposed to provide public announcements or private two-way communication between train attendants and dispatchers.

This is the WABCO concept for rail transit central control, automatic train operation, to be demonstrated shortly on the San Francisco Bay Area Rapid Transit District.

Basic Advantages of Modern Control Techniques

Let us consider some of the major advantages of the basic audio frequency track circuit and speed control system:

1. Reduction in installation and maintenance costs
2. Improvement in propulsion negative return
3. Reduction of trackside equipment
4. Applicability to welded rail
5. Reduction of noise
6. Simplification of track maintenance
7. Centralized housing
8. Expandibility to centralized system control—and—
9. Expandibility to automatic train operation.

This new equipment and these new techniques are ready for use today, based on time-tested, accepted safety principles.

We are eagerly looking forward to demonstrating our capability in San Francisco.

1967 "Expo Express" To Be Equipped With New Devices

In Montreal, WABCO's Union Switch & Signal Division will supply this modern audio frequency cab signal and speed control system without wayside signals for "EXPO EXPRESS", the transit system to carry visitors to the 1967 Montreal World Exhibition.

Top Brass in Signal and Communications Meet To Discuss Problems Facing Industry

IN A KEYNOTE SPEECH BEfore the fifth annual meeting of the AAR Communication and Signal Section, first vice-chairman J. R. DePriest—superintendent of Communications and Signals on the Seaboard Air Line Railroad—pointed out recent major developments. He also directed attention to progressive moves in the industry and declared that many obvious problems must be solved to elevate the roads to their place in the nation's economy.

Numerous examples of problems confronting the industry were cited and emphasis was placed on the use of modern technology to gain solutions.

"Nearly five years have elapsed since the Section was formed by merger of the Communication Section and the Signal Section," DePriest pointed out when he added that these years have been important for the world and the railroad industry. "On July 10, 1962 the Telstar communication satellite enabled the people of Europe and the United States to exchange television signals live for the first time. The first picture transmitted was that of the United States Flag blowing in a breeze. In July of 1963 the SYNCOM-2 communication satellite was launched which permitted the people of the United States to watch on live television the Olympics held in Japan last year. Just three weeks ago the manned satellite, Gemini-5, completed its 121 orbit after remaining aloft for nearly eight days.

"In the railroad world we have inaugurated services which have enabled rail carriers to recover much of the traffic formerly lost to other forms of transportation. Operation of unit trains is providing more economical service. Remote control of locomotives by radio has been accomplished. Automatic train operation gives promise of still greater operating efficiency. Numerous installations of hot box detectors with various forms of communication and signaling devices have been placed in service. Electronic train height and width detectors have been installed. Railroads are using slave locomotives located near center of the train and under control of the lead locomotive. Digital computers are now employed for the control of signals. Many installations of highway crossing signals have been made, utilizing the new solid state computer system which continuously calculates the velocity of an approaching train and its distance from a highway crossing.

"Many of these advances are now practicable because of the development of the transistor. Many of you will remember the Communication Section meeting in Colorado Springs during 1948 when Newton Monk told of the invention of the transistor by two physicists working at the Bell Telephone Laboratories.

Solid State Advances

"Today, 17 years after the invention of the transistor, we are fortunate to have a highly developed industry capable of supplying excellent solid state devices. Integrated solid state circuits are being produced and undoubtedly this will permit new control systems to be installed in the limited space available in locomotives. However, with the present state of the art, economics do not permit the elimination of the highly developed signal type of relay from a signaling system requiring the fail safe features of modern Traffic Control. Undoubtedly, additional work will be undertaken in this field in the future, but designers will have to meet a great challenge if they are to surpass the relay system from a safety viewpoint.

"The remarkable efficiency achieved by American railroads is clearly shown by the way in which they have held down their charges for freight service. To illustrate, in 1948 their average receipt for hauling a ton of freight one mile was 1.251 cents. Last year the average was 1.248 cents, actually a slight reduction! But material prices and wage rates were moving higher almost continuously during that period. For example, between 1946 and 1956 there was a jump of 153 percent in the cost of signal apparatus, and it certainly has not become any less expensive since that time. The hourly wage for a signal helper has gone from 54 cents in 1930 to $2.537 in 1965, an increase of 370 percent without taking into account fringe benefits such as additional vacation, unemployment insurance, Railroad Retirement, and the like. To be able to meet such vastly increased expenses and yet provide improved service at lower cost is indeed a tribute to the skill and ability of our industry. I am glad to be able to note that the Communication and Signal Section and its suppliers have produced apparatus which has contributed significantly to the increased efficiency of railroad operations.

"For example, assume that we have a railroad one hundred miles in length with sidings each spaced at ten mile intervals. If a Centralized Traffic Control system were installed on this line, it would provide the equivalent of three operators at each end of the sidings for 24 hours each day, or 175,200 man hours per year. If labor cost $3 per hour this would amount to $525,600 per year. The signal system could probably be installed on a line of this type for approximately $2 million.

"For another example, the highway crossing signal is equivalent to 1 man hour for each 24 hours a day, or 8,760 man hours per year. Of course, you may disagree with me and say it is worth even more than that if the eight holidays and a vacation ranging up to four weeks per year for each employe are considered, but these have been omitted to simplify the equivalence. At a labor rate of $2 per man hour the highway crossing signal is equivalent to $17,520 per year.

"Again, assume that a telephone circuit was needed between two points 200 miles apart and a physical circuit is available upon which a single channel carrier may be applied. That carrier is equivalent to $3,360 per annum if the telephone circuit could be rented at the existing Telpak rate of $1.25 per mile plus $30 for terminations. In most instances, it could be installed for approximately $4,000. Again, you may disagree and say it is equivalent to more than $3,360 per year since the existing Telpak rate will probably be no longer available and the circuit will have to be leased at

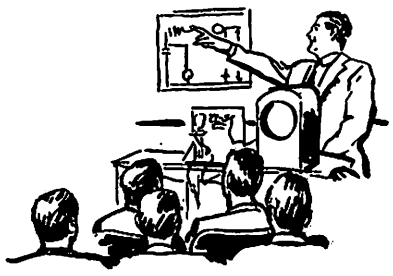
a higher rate. There are many other examples that I could cite that produce similar savings.

"While proven devices and system are available, there are many railroads that have not taken full advantage of their use. The demand for railroad capital is exceedingly great and we have the responsibility to our managements to point out projects capable of producing substantial economic savings in order that the railroads may render their services at the most economical level.

"Another problem that has been studied by the railroad industries for a long time is the need for an improved insulated joint for electrically isolating a section of rail required for the basic track circuit used in railway signaling. The industry has spent many hours in both the laboratory and the field testing insulated joints and their components to improve their strength and performance. The cost of providing these joints in track laid with welded rail is of such magnitude that signal engineers in both the supply and rail industry should endeavor to eliminate or reduce the need for them. The economics of the problem are such that considerable sums could be saved if all insulated joints could be eliminated from the track. The high frequency overlay track circuit has been developed to a point where it can be used satisfactorily for highway crossing signals, but to my knowledge no one has attempted to utilize the overlay track circuit for automatic block signals in order to eliminate insulated joints. Is it economical at this time to use several frequencies to avoid mutual interference in a similar manner as used in microwave communication systems? The engineer investigating this problem will be faced with a challenge to devise a system that will provide precise cut off locations for each track circuit which will operate under all types of weather and operating conditions. The solution is not easy, but, undoubtedly, further development will be made with solid state devices that will tend to reduce, if not entirely eliminate, the insulated joint for signal systems in the future.

"There are still other problems, many of which are largely beyond the control of the railroads. As a case in point, at this time there is under consideration the transmission of electric power over great distances by using direct current. It is to be transmitted over a one conductor transmision line with the earth used as a return. The voltages proposed are in excess of half a million volts and it is expected that the current may be in the order of 2,000 amperes. Those signal engineers here today who can remember the street car era will advise that such a system will cause improper operation of many signal systems in service today. Since the track rails are in contact with the ground, we can expect foreign current of this DC transmission to enter the rail from the ground and cause track relays to energize at times when they should be deenergized. The railroads face a major task in revising their signal systems if the DC form of power transmission expands as proposed.

"Another major problem facing the railroads in this country is the prevention of rail-highway grade crossing accidents involving trains and motor vehicles. This is a problem of growing importance and again one that cannot be solved entirely by railroad management. According to the Interstate Commerce Commission's report on rail-highway grade crossing accidents for the year 1964, there were 220,165 rail-highway crossings at grade, of which 43,484, or approximatedy 20 percent, have special protection. There were 3,539 collisions involving motor vehicles and trains and 1,519 of these accidents, or 42.92 percent of the total, occurred at crossings protected by one of the following means of warning: lowered gates, trainmen, watchmen, audible and visible signals, audible signals or visible signals. The railroads, Federal, State and local governments, and private industry have invested considerable capital to provide protection for these grade crossings. Even with signal and gate protection at the crossing, far too many accidents occur. On February 10, 1964, the Interstate Commerce Commission issued its Report No. 33440 dealing with this subject and it was interesting to note that out of 2,931 accidents, or 66.22 percent of the total number, there were 1,941 accidents which occurred in clear weather, 286 of which were in daylight and caused by the motorist running into the side of the train. Therefore, average weather conditions do not appear to be significant in these accidents, since most of them occurred during clear weather. Among the examiner's findings adopted by the Commission is this one, which I shall quote:



" 'That the highway users are the principal recipients of the benefit flowing from rail-highway grade separations and from special protection at rail-highway grade crossings. For this reason cost of installing and maintaining such separations and protective devices is a public responsibility and should be financed with public funds the same as highway traffic devices.'

"There are many state, county, and municipal laws which require the railroad to bear the entire burden of expense of installing highway signal protective devices even to the extent of adding gates at existing highway signal installations. This, of course, is in conflict with the recommendation of the Commission. I am sure that many of you have wondered, as have I, why the municipality will provide signals at an intersection of two highways, but not highway crossing gates for the protection of the motorist while on the other hand they demand such facilities for rail-highway crossings. Before accidents can be eliminated at protected railroad grade crossings, I am sure all of you will agree that the signal indication must be obeyed by the motorist. The public apathy toward safety at a railroad grade crossing is frightening. I recall one incident of interest where a train hit an automobile parked fouling both rails of the track at a protected crossing. Fortunately it did not cause a death, and the driver was questioned as to his reason for stopping his automobile on the main track of the railroad crossing. He stated that his wife insisted that he stop and take a pill. If all motorists were as obedient to highway crossing signal indications as that man was to his wife's orders, this problem would be solved.

"There is an increasing tendency on the part of motorists in traffic jams to stop, with their vehicle fouling the main track of a railroad at a crossing, and be in a position where it is impossible to move forward or backward when a train approaches. The railroad certainly needs the cooperation of the public officials to correct conditions of this type. Before leaving this subject, I should also call your attention to one other item in the findings of the Examiner of I.C.C. Report 33440 which I shall quote:

How Working Affects Benefits Under the RRA

RECENT LEGISLATION LIBeralized the conditions for the payment of monthly benefits from the Railroad Retirement Board to survivors (and to certain retired employes and their wives) who work. It is important for persons receiving annuities to know what these conditions are so they can avoid loss of benefits. The following questions and answers explain the new rules.

1. *I am the widow of a railroad employe. What are the new conditions governing the payment of my annuity if I go to work?*

Under the new rules which will be effective in 1966, if you earn more than $1,500 in a year, you can lose $1 in benefits for each $2 earned between $1,500 and $2,700, and $1 in benefits for each $1 earned over $2,700. No deductions will be made in your annuity, however, for any month in which you earn $125 or less. These restrictions only apply while you are under age 72. As before, your annuity is not paid for any month in which you work for a railroad, regardless of your age.

Under the old law, reductions began when earnings exceeded $1,200 a year, and the dollar-for-dollar deductions started at $1,700. Also, deductions could be made for months in which earnings exceeded $100.

2. *I am receiving a widow's annuity of $70 and have a part-time job as a sales clerk. How will the benefit deductions be made if I have excess earnings in 1966?*

Suppose you earn $235 in every month of the year or a total of $2,820. The amount to be deducted is $720 ($600 for the $1,200 of earnings between $1,500 and $2,700, and a further reduction of $120 for the $120 of earnings over $2,700). You will therefore lose your annuity entirely for 10 months, plus $20 from your annuity for the 11th month.

Suppose, on the other hand, that you earn the same total amount in the year—$2,820—at the rate of $120 a month for 8 months and of $465 a month for 4 months. Even though your excess earnings would be the same as in the above example, you would lose only 4 months' benefits or a total of $280. This is because no deductions would be made for the months in which you earned $120.

3. *Do the restrictions on the payment of benefits apply to other types of survivor annuities?*

Yes. They also apply to regular children's annuities and to parents' annuities. The earnings restriction does not apply to disabled children aged 18 and over, however. Their earnings are subject to special review.

4. *My widow's annuity will begin next July when I will be 60 years old. I plan to quit my job as a schoolteacher at that time. Will my earnings in the first 6 months of the year affect my annuity?*

Your earnings in the first 6 months will be counted in determining if you have excess earnings for the year. Regardless of how much you earn in the first 6 months, however, you can draw your annuity for the remaining months of the year in which you do not earn more than $125 and do not work for a railroad.

5. *I will be 72 years old in March 1966. How will my earnings in 1966 affect my widow's annuity?*

Your earnings in the entire year will be counted to determine if you have excess earnings, but no deductions will be charged against months in which you are aged 72 or over. For example, assume your annuity is $74 a month and that you earn $200 in nonrailroad work in every month of the year, or a total of $2,400. According to the formula explained in the answer to question 1, your benefit deductions could total $450. Because of your attainment of age 72 in March, however, deductions will be charged only against January and February. Thus, you would lose only 2 months' benefits or $148. If you earned $125 or less per month in January and February, there would be no benefit deductions regardless of how much you earned in nonrailroad work in the year.

6. *I am a widow with two children. If my annuity is suspended because of earnings will their annuities also be affected?*

No. They will continue to receive their annuities if they have no excess earnings of their own.

7. *I understand that there are special restrictions on the payment of retirement benefits that have been figured under a special guaranty. What is this guaranty and what are the special restrictions?*

The special guaranty is contained in a provision in the Railroad Retirement Act which assures railroad employes and their families that their monthly benefits will not be less than 110 percent of the

Civil Engineers
Project Engineers
Circuit Designers—Checkers

for

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Pittsburgh, Pennsylvania 15218
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amount, or of the additional amount, they would receive if railroad work after 1936 had been covered by the Social Security Act. A family's benefits are paid under this guaranty if it produces higher amounts than the regular methods of computation. The portion of the benefits to a retired employe and his family that is due to the guaranty is subject to the same restrictions as those which apply to the payment of social security benefits. These restrictions, however, cannot have the effect of reducing benefits below the amount the family would receive under the regular railroad retirement formulas.

8. *I am receiving an employe annuity based on age and service that was computed under the special guaranty. It amounts to $99, but would be $85 under the regular method of computing benefits. How would the earnings restrictions work in my case?*

You could lose no more than $14 a month in benefits as a result of the restrictions on benefits computed under the special guaranty. Of course, your annuity would not be paid at all for any months in which you work for a railroad or for your last nonrailroad employer.

9. *If a widow is receiving an annuity figured under the special guaranty, are the earnings restrictions on her benefit different from those on survivor annuities computed under the regular formula?*

No. The restrictions are the same. The different treatment discussed in questions 7 and 8 applies only to retirement benefits.

GRS Announces New Appointments

The appointment of Sam Russo as customer service engineer at the Chicago office of the General Railway Signal Company, a unit of General Signal Corporation, is announced by O. D. Stowell, Jr., manager of railway sales.

Russo joined the GRS Test Department in 1947 and transferred to the Centralized Traffic Control group in 1956.

The appointment of Werner H. Siemens as customer service engineer at the New York office of GRS, was also announced by Mr. Stowell.

Siemens joined GRS as an application engineer in 1964. Prior to this he was a senior circuit designer for the Canadian National Railways in Edmonton, Alberta, starting with CNR in 1955.

Determine Your Rights Under FELA

Members who are injured on the job and the dependents of those members who have been killed or have died as the result of such injuries should by all means ascertain their rights and benefits under the Federal Employers' Liability Act before attempting any settlement with the railroad.

Below is a list of attorneys who, on the basis of information made available to us, are competent to give full information and assistance to those in need of it.

This list is compiled and maintained on the strength of information furnished us by both attorneys and members. The accuracy of the list that we will publish from time to time depends entirely on the information furnished us. Therefore, everyone concerned is urged to keep us informed, regarding cases handled, nature of the case, terms of the settlement, commendations, criticisms, etc.

Vice President G. Orndorff, Room 1812, 220 South State Street, Chicago 4, Ill., has been designated to receive and compile this information.

Atlanta, Ga. Thomas J. Lewis, Jr., 905 Healy Bldg.
Tel. JAckson 2-4229

Baltimore 2, Md. Bernard M. Savage, 10 Light St., 30th Floor, Maryland National Bank Bldg.
Tel. MUlberry 5-2713

Bergenfield, N. J. Charles J. Tyne, 104 N. Washington Ave.
Tel. DUmont 4-9433

Birmingham 3, Ala. Rives, Peterson, Pettus & Conway, 17th floor, Twenty-one Twenty-one Bldg.

Boston 8, Mass. Francis H. Farrell, Suite 701, Old South Bldg., 294 Washington Street
Tel. LIberty 2-3270

Chicago 2, Ill. Henslee-Monek-Henslee, 120 Madison Bldg.
Tel. STate 2-5925

Cleveland 14, Ohio. Howard M. Metzenbaum, 700 Union Commerce Bldg.
Tel. PR 1-4515

Denver 2, Colo. Alex Stephen Keller, 316 Symes Bldg.
Tel. ALpine 5-3603

East St. Louis, Ill. Dan McGlynn, 120 N. Main Street

Fort Worth, Tex. Contact George L. Schmidt, at Houston 2, Texas.

Houston 2, Tex. George L. Schmidt, 1307 American Investors Bldg.
Tel. CA 2-2268

Kansas City, Mo. Ernest Hubbell, 2505 Power and Light Bldg., 14th & Baltimore Ave.
Tel. BAltimore 1-5666

Kansas City, Mo. Frank X. Mattes, 1014 Argyle Bldg., 306 E. 12th Street
Tel. HArrison 1-5570

Los Angeles 13, Calif. Clifton Hildebrand, 408 S. Spring St., Suite 205
Tel. MAdison 9-2214

Minneapolis 2, Minn. Eugene Rerat, 1100 First National Bank Bldg.
Tel. FEderal 9-9231

New York 17, N .Y. John V. Higgins, 535 Fifth Ave.
Tel. YUkon 6-1377

Oakland, Calif. Clifton Hildebrand, 1212 Broadway
Tel. GLencourt 1-6732

Pittsburgh 19, Pa. Robert B. Ivory, 711 Frick Bldg.
Tel. GRant 1-4780

St. Louis, Mo. Ernest Hubbell, 408 Olive St., Suite 302
Tel. CHestnut 1-0505

St. Louis, Mo. Frank X. Mattes, 611 Olive St., Suite 1814
Tel. MAine 1-6992

Salt Lake City 1, Utah. Wayne L. Black, 530 Judge Bldg.
Tel. EMpire 4-3566

San Antonio, Tex. 78205. George L. Schmidt, 1515 N.B.C. Bldg.

Seattle, Washington 98104. Arthur E. Piehler, 1519 Norton Bldg.
Tel. MAin 4-4700

Sherman Oaks, Calif. John M. Ennis, Suite 27, Lydee Bldg., 15445 Ventura

Syracuse, N. Y. J. Murray Dunn, 707 State Tower Bldg.
Tel. HA 2-0303

Vicksburg, Miss. W. W. Ramsey, First National Bank Bldg.
Tel. VIcksburg 63-6-5561

Wichita 2, Kans. John C. Frank, 1217 Union National Bldg.
Tel. AMherst 4-0346

Wichita, Kans. Payne H. Ratner, 444 N. Market, P.O. Box 306
Tel. AMherst 2-6423

Wisconsin Passed Railroad Legislation Reflects Gains for Public and Union Members

General Chairman R. B. LeBaron, legislative representative in the State of Wisconsin, recently reported on the activities of the Wisconsin State Legislature and pointed out that sessions convened January 12 and remained in session until July 31, at which time they recessed to reconvene on October 4.

In summarizing the bills introduced to the Legislature applying to the railroads Brother LeBaron pointed out that those which directly affected railroad employes were supported if they were of benefit and were vigorously opposed if not.

The following is the status of the Bills:

34-A — Railroad Horns — To enable Public Service Commission to regulate location of Horns (now, whistles only) on Locomotives. This Bill passed both houses, approved by the Governor and became Chapter 151.

81-S—Railroad Track Motorcar —To require railroad track motor cars to be equipped with removable or fixed side and rear panels or curtains (now, curtains). This Bill passed both houses, approved by the Governor and became Chapter No. 64.

124-S—Railroads; Worker Transportation—To require railroads to provide safe "Motor Vehicles" for transportation of workers. Public Service Commission to establish rules and regulations. The Senate passed this Bill April 28, 1965 after motion to indefinitely postpone was defeated, Ayes 8; Noes 24. Public hearing held by Assembly Committee on May 25, 1965. Due to recess of Legislature this Bill will be acted upon at the fall session.

145-S—Railroad Train Crews—To eliminate statutory regulations of Train Crews. This Bill introduced at the request of the Wisconsin Railroad Association. Public hearing came before the Senate on May 5, 1965 and the railroad organizations were able to have the Bill laid temporarily aside. No doubt the railroads will try to move this Bill at the fall session.

296-S — Railroad Grade Crossings; Cost — To provide that the State's share of the cost of warning devices at public highway and railroad grade crossings shall not exceed 90(now, 70) percent. Public hearing held May 12, 1965 and still tied up in Committee. Will be taken up at the fall session.

491-S — Car Line Tax — To provide that car line tax shall apply to car line equipment whether rentals are paid on per diem, per mile or mixed basis. Passed the Senate June 17, 1965. Public hearing held by Assembly Committee on July 6, 1965. Further action will be taken at the fall session.

528-S—Railroad Crossings; Highways—To include maintenance of railroad grade separations or crossing eliminations as a cost to be allocated between railway and highway fund(now, construction cost only). Public hearing held June 30, 1965 by Senate Committee. Further action will be taken at the fall session.

Brother LeBaron is the System General Chairman for the Brotherhood of Railroad Signalmen System General Committee, Chicago and North Western Railway Company, Chicago Great Western Railway Co., and the Green Bay and Western Railroad Co.

RRB Explains How To Participate In New Health Insurance Plan

THE RAILROAD RETIREment Board has announced how railroad employes and persons on the Board's rolls who are aged 65 and over can participate in the new health insurance programs.

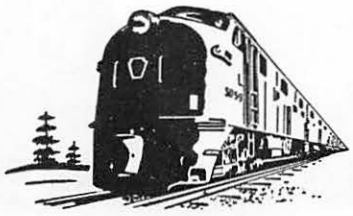
Early in October, the Board will mail literature about the new programs and an enrollment card to eligible persons on its rolls who are not receiving benefits from the Social Security Administration. These persons will automatically participate in the hospital insurance plan, but they must individually decide whether they wish to have the voluntary medical insurance coverage. They should indicate their decision about the medical insurance plan on the enrollment card and return it to the Board.

Eligible persons who are receiving benefits from the Social Security Administration, including railroad employes and their wives and persons on the Board's rolls, will also automatically participate in the hospital insurance program. The Social Security Administration will mail these individuals literature about the programs and an enrollment card before the close of 1965.

Beginning September 1, 1965, eligible railroad employes and their wives who have not yet applied for railroad retirement or social security benefits can join the health insurance programs at any Railroad Retirement Board field office. These individuals must file an application and establish proof of their age if they wish the hospital insurance coverage or if they wish to enroll in the medical insurance plan.

The law limits the periods during which persons can enroll in the medical insurance plan. Persons who will reach age 65 before January 1, 1966, will be protected under the medical insurance plan when it begins on July 1, 1966, only if they enroll by March 31, 1966. Persons who will reach age 65 after December 1965 will have protection as soon as they reach 65 only if they enroll during the 3-month period just before they reach that age. In no case, however, will the medical insurance take effect before July 1, 1966.

Railroad NEWS IN BRIEF



THE SOUTHERN RAILWAY COMPANY is to receive delivery on locomotives from the Electro-Motive Division of General Motors on which 110 sets of intermittent inductive train-control equipment has been installed. The train-control equipment is being supplied by The General Railway Signal Company, a unit of General Signal Corp.

THE MISSOURI PACIFIC RAILROAD Co. has ordered one Wheel Thermo-Scanner from The General Railway Signal Company for delivery to Chester, Illinois. The Unit is an electronic-optical device which automatically detects and reports overheated wheel bearings.

THE ASTOR ELECTRIC SERVICE has ordered drawbridge protection system from the General Railway Signal Company to be installed at Dodge Island for the Port of Miami, Florida. The System will facilitate Florida East Coast Lines train movements to and from the Dodge Island warehouse area.

THE SOO LINE RAILROAD has ordered Type J centralized traffic control equipment from the General Railway Signal Company, a unit of General Signal Corporation, to expand their North Fond du Lac to Schiller Park installation north and westward to Stevens Point, Wisconsin.

The existing control machine at Stevens Point will be expanded to handle the additional 14 control points and 89.5 miles of track.

THE GULF MOBILE AND OHIO RAILROAD COMPANY has ordered six Wheel Thermo-Scanner Units from the General Railway Signal Company, a unit of General Signal Corporation. These are electronic-optical devices which automatically detect and report overheated wheel bearings.

Two Wheel Thermo-Scanner Units are for delivery to Jackson, Tennessee; two are for Mobile, Alabama; and the remaining two will be shipped to Bloomington, Illinois.

SWITZERLAND'S FURKA-OBERALP RAILWAY, 60 miles of narrow gauge track, this year celebrates its 50th year of operation.

Today carrying tourists through scenic Glacier sections of Switzerland, it was originally a freight-hauling line, beginning its initial run during World War I on the Brig-Gletsch line. Continuous summer service along the Brig-Gletsch-Andermatt-Disentis route was instituted in July, 1926, after the Swiss government granted the railway financial aid to meet its construction costs amounting to more than 40 million francs.

THE CANADIAN NATIONAL RAILWAYS have ordered Type K2 centralized traffic control equipment from the General Railway Signal Company, a unit of General Signal Corporation, to add three control points to their existing Winnipeg-Melville installation.

The existing Traffic Master machine at Winnipeg will be modified to handle the three new locations.

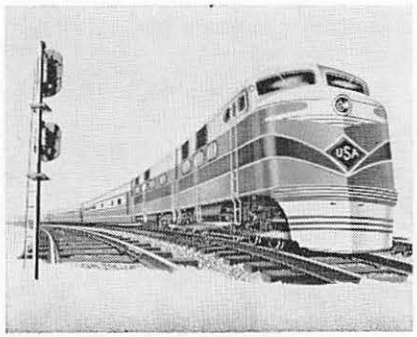
THE CHESAPEAKE AND OHIO RAILWAY COMPANY has ordered Type D1 centralized traffic control equipment from General Railway Signal Company, a unit of General Signal Corporation, to add to their Saginaw-Ottawa, Michigan installation.

Railroad "Y" Continues To Serve

Railroad Y.M.C.A.'s in the United States and Canada served railroad employes, their families and community friends at more than 200 different locations during the past year. A total of 130,528 individuals joined the Railroad "Y" and became part of the international Y.M.C.A. movement that serves men and women and boys and girls around the world.

Railroad Y.M.C.A.'s were first organized almost 100 years ago to furnish so-called "creature comforts," such as sleeping facilities and food service, to railroad men "laying over" at terminals away from home. This is still a major function of the railroad associations, although today they have branched out into many other kinds of services and activities.

Many of these associations are still located at isolated railroad division points where they provide railroad men with the only bed and food available. But in addition, some railroad associations today are also the community Y.M.C.A.'s and their activities involve the railroad employe, his family and people living in the locality. Often the facilities used are as modern as those in any up-to-date city Y.M.C.A.



Railroad employes have traditionally responded to the Annual Continental Membership Campaigns. By joining the Railroad Y.M.C.A. they became associated with a great Christian organization, and in doing this they realize they not only help themselves, but they also help provide worthwhile activities and programs for their neighbors and friends.

October is usually designated as Membership Month, and a number of the railroad associations conduct their drives during that month. Because of local conditions other associations throughout the country may conduct their campaigns at other times of the year. All of this effort is part of the total enrollment campaign.

Railroad management and railroad brotherhood and labor executives are united in their praise of services rendered by these Railroad "Y's" and each year lend their support to the annual membership campaign.

news from Canada

CRLEA Opposes Discontinuance of 'The Dominion'

B of RS Grand Lodge Representative H. A. Stockdale recently notified the *Journal* of activities of the Canadian Railway Labor Executives' Association regarding The Board of Transport Commissioners' Hearings in connection with C.P.R. plans to discontinue several trains.

The Canadian Pacific Railway had notified the Board that trains 3, 4, 13 and 14 would be discontinued on September 7, however, due to public protest, the Board issued an order on Sept. 1 requiring the carrier to continue to operate "The Dominion" pending public hearings by the Board.

The Company must furnish a statement of its reasons and a summary of the evidence that it intends to offer at the hearings, including evidence as to revenues, expenditures and passengers carried during the period January 1964 to August 1965, evidence as to what displacement of railway employes will result, evidence as to what transportation will be offered by the Company in lieu of "The Dominion," and evidence as to the Company's reservations system and requests for space on its transcontinental trains that it has been unable to meet during the above period.

The Company must also furnish a copy of the statement of reasons and summary of evidence to any of the following parties who make a request therefore to the Board or to the Company's Commission Counsel, Mr. K.D.M. Spence, Q.C., Windsor Station, Montreal, other cities, towns and municipalities, present members of Parliament, provincial governments, chambers of commerce, railway labour organizations, and counsel representing interested parties.

The evidence in chief of the Company shall be presented at the commencement of the first hearing, and in order that parties at subsequent hearings elsewhere may have knowledge of such evidence, the Company shall at the commencement of each subsequent hearing recall its witnesses to give a brief resume of their evidence in chief. The witnesses may be questioned by other interested parties at each meeting.

Hearings to be held as follows: At Winnipeg, commencing on September 27; at Vancouver, commencing on October 5; at Calgary, October 12 and 13; at Regina, October 14 and 15; at Ottawa, October 19, 20, and 21; and at Port Arthur, on a date to be determined.

CRLEA met in Montreal on September 10 and it was decided to retain Mr. M.W. Wright, Q.C., as Counsel to represent the Membership of CRLEA at the hearings.

Because all evidence will be made available to us, it was decided that the CRLEA will appear before the Board in Ottawa, on October 19, 20 and 21.

Many of the CRLEA member organizations have been active by joining with Municipal authorities and other groups in opposing the discontinuance of these trains. It was suggested that interested parties contact their respective Municipal authorities, service clubs and other interested groups and assist in every way possible to ensure that the public interest will be represented at the hearings.

Well Known Labor Correspondent Dies in Chicago

Robert H. "Bob" Perkins, long-time Chicago and midwestern Rail Labor Correspondent, died suddenly of a heart attack at the age of 49.

Bob has played an active role in the labor movement for the past 25 years. He headed Robert H. Perkins & Associates, a firm specializing in public relations for trade unions. He was also Chicago area correspondent for newspaper LABOR and for Press Associates, news service for labor publications. For a number of years, he performed public relations work and prepared frequent articles for *The Signalman's Journal.*

A staff member of the Chicago Federation News, Perkins had long been active in the Chicago Federation of Labor. He had acted as Chicago Federation of Labor delegate from the Chicago Newspaper Guild for many years.

Bob was known wherever he went and he put no limits on the hours he spent in union work. He will be sorely missed by unions in Chicago and by railway Brotherhoods throughout the country.

G.R.S. Veep Declares Technological Techniques Now Available for 'New Railroads'

"New Railroads"—Principally, a new kind of railroading to replace present methods

This article is excerpted from a paper "Meeting the Control Challenge on New Railroads," presented by S. W. Freeman before the Annual Meeting of the Association of American Railroads Communication and Signal Section September 14.

Mr. Freeman is vice president in charge of Engineering for General Railway Signal Company, a unit of General Signal Corporation.

By S. W. Freeman

"Meeting the Control Challenge on New Railroads", offers an opportunity to discuss what that challenge is, what we know should be done to meet it, and, finally, what techniques we have already developed toward implementing a practical approach to fulfilling control needs on the new railroads.

In using the term "new railroads", it is not intended to limit our discussion to railroads just built or yet to be built. Rather, it is intended to speak principally of the new kind of railroading, that will replace — and, indeed, is already replacing — our present methods of railroading.

Consider the investigations proposed today for drastically increasing the speeds of passenger trains in the so-called high-density corridors of our country. Consider also those railroads which are upgrading the running speeds of freight trains to present day passenger train speeds. Consider those roads which, because of new propulsion techniques, new power generation methods, and new schemes for more efficient power distribution, may find it economic to electrify their operation—any of these would in effect create a "new" railroad.

More trains, faster and more frequent service, obviously demand a high level of control system sophistication. The system must exercise continuous control, based on complete, up-to-the-second, information and instructions. The system must be continuously informed as to: (1) what is wanted—customer requirements (2) what is available—cars, motive power, track capacity, etc., and (3) what is being accomplished—the up-to-the-minute progress record for each train. This is an oversimplification, but it will serve as our guideline in filling out the details as we go along.

Although signaling was originally introduced for the purpose of maintaining safety—and this is still a fundamental requisite—modern signaling is continuing to take on more of the characteristics of an advanced operations control facility.

S. W. Freeman

This control facility comprises three separate, but closely interrelated, systems: (1) the line supervisory system, (2) the train separation system, and (3) automatic train operation.

This organization closely parallels what has been developed and is being tested for BARTD, the San Francisco Bay Area Rapid Transit District. Let us hasten to add however that, while we can and do look to BARTD for much help in developing and perfecting new concepts, there are many—and major —differences between the requirements for our "new railroad" concept and those for BARTD. Mainline railroad traffic is, for example, much more varied; there is a much greater variation in train speeds and train consists; interlockings, terminals, and yards are both more numerous and more complex; the distances involved are much greater; headways need not be so close; and the train acceleration and deceleration characteristics required for optimum performance are not similar.

Now, to return to our control concept for our new railroad, considering the first the line supervisory system. This might well be termed an adaptive automatic dispatching system—a dispatching system that has the ability to learn from experience and to apply what it has learned to improve train handling. Physically, it comprises a control and display console, a digital computer, a two-way communicating system for transmitting directions and for receiving field data, and a train identity system.

The console displays, in real time, the condition of the new railroad. It includes means for manually overriding the automatic controls whenever required by the central authority.

The computer is furnished with the ground rules for scheduling and with the kinds of decisions it must make for the various combinations of circumstances. The computer transmits its decisions as commands to the trains and to the wayside route-setting equipment through the communication system, a high-speed solid state cTc system. These commands are the output of its decision making function, based on the flow of information from the field as well as from those additional directions which may be inserted by the central authority as the need arises.

To meet the control challenge of our new railroad, such an automatic dispatching system would have to be more sophisticated than the one for the BARTD project, where most operations will very likely be routine. Self-propelled equipment, of uniform and fairly easily predictable performance, simplifies the rapid transit system. Our new railroad must run varying trains, freight, unit, and passenger, mixed as needed, yet with minimum interference. The characteristics of the terrain will undoubtedly be such as to preclude the exact matching of motive power to grades. Motive power will at times be distributed within the train, such as with the Train Multiple Unit-er, instead of being all concentrated at the head end. These will be among the variables that the computer function of the automatic dispatching system will consider.

Automatic dispatching, to a degree, is already with us. An Automatic Traffic Control system was developed several years ago which can regulate and protect the movements of trains on single track, entirely without line wires or manual supervision. Also, railroads have installed systems which use the information stored in control consoles by the cTc systems to clear signals automatically in advance of trains. By making use of logic circuits—a kind of fixed program—these systems relieve the cTc operator of routine procedures, freeing him for closer supervision of the more complex dispatching problems.

Further, there are presently existing means of arranging cTc systems so that meets can be made automatically—on a first-come first-served basis—even if the control link to headquarters should be interrupted.

Let's consider what has actually been done in computer-oriented train scheduling. In 1958, we at GRS showed how the performance of a train schedule could be predicted with exactitude. We used IBM 650, an early computer that, by today's standards, would be considered slow and very limited in memory capacity. Thus we were somewhat restricted as to the amount of territory and the number of trains that we could handle. First, we fed the computer what it had to know about the railroad (a subdivision on the Canadian Pacific): curves, grades, signal locations and aspects, switch locations and turnout sizes, siding locations and capacities, speed restrictions, block lengths, etc. The computer also had to know locomotive power characteristics and train information such as length, weight, class and other priority.

Then the operating program was impressed on the computer, which took the trains, with their scheduled terminal departure times, and ran them to determine the optimum meets. Restarts at different times were made as needed to get the best overall results.

Although the computer based its calculations on the actual train speeds attainable and allowable, it operated at a theoretical speed of 800 miles per hour—very slow indeed for a present day computer, which is capable of performing such evaluations by theoretically running the railroad at 40,000 mph—or fifty times faster than in 1958. This is a mathematical operation speed within the computer. We don't recommend rocket propelling trains at this speed—they might go into orbit around the sun.

Later, this test program was put to actual use to select a space to run an additional train at a required time over an already crowded division. The computer produced a schedule which proved quite satisfactory. Predicted operation was matched with actual operation within about 5 percent. This kind of work is now being done on several types of the newer and far more competent computers—much faster and with more memory capacity.

Thus we know how to run a railroad by computer. With complete input data available in volume and received at electronic, real-time speed and a fast, modern, digital computer, it is possible to test a projected route automatically and continuously and to change it if an undesirable result is predicted, all in the instant before transmitting the actual final controls to a train to proceed, diverge, slow down, etc.

The human dispatcher knows his railroad terrain, he knows the abilities of the various enginemen, and he knows how previous trains have performed. This knowledge—together with his experience—enables him to judge what performance he can expect from the next train.

The computer too can predict from facts at hand. It knows how the trains have been performing. It can check predicted performance against actual performance and can continuously refine each succeeding prediction to secure increasingly better scheduling as each train proceeds, on an up-to-the-minute basis.

In a sense, a computer can also maintain itself. By using exploratory programmed techniques, it can tell what's wrong and what should be done to correct it. It can actually pinpoint trouble areas by referring directly to the affected parts of the circuits.

In discussing the line supervisory system for our new railroad we have, admittedly, given the lion's share of attention to the computer function. This is not to imply that the other aspects of the line supervisory system—the control and display console, the train identity system, and the high-speed coded communication links—should be overlooked. They are important, even though they are more familiar to most of us. The control and display console would be very much like our present pushbutton control centers, plus additional facilities for displaying train identities and for printing out train progress reports.

The train identity system would transmit information from the moving train to the wayside. The GRS General Reporting System in use on BARTD can transmit 16 bits of information in 0.01 second. Thus it can transmit to the control center considerable information in addition to train identity: speed, braking, power and brake application, engine temperature, fuel guage readings, etc. The equipment on the locomotive transmits its information via a locomotive-carried coil, which registers with a wayside receiver. These can be as far as four feet apart, so there are no mechanical alignment problems.

The high-speed communication link could be any of several high-speed, solid-state cTc coding systems now in use or under development. The transmitting medium can be pole line, buried cable, or microwave — even communications satellites — either railway owned or a rented service.

Let us turn, now, to another area of our control for the new railroad, the train separation system. Our new railroad is going to handle a lot of trains, and there will be a lot of different kinds of trains, with different speeds, lengths, braking abilities, and accelerating characteristics. At first glance, a variable block system appeared to be the ideal way to keep such traffic safely separated with the least delay. In such a system, separation zones would travel along behind each train, becoming longer or shorter as the train speeds changed. But, as we long ago learned, the apparently obvious, pat solution does not have an enviable record as the best solution. This is why today "development" is always mentioned in the same breath as "research". We made an extensive examination of both the fixed and the variable block systems. We programmed a digital computer to operate trains, using the variable, or moving, block system and — with the same conditions—we also programmed a computer to simulate train operation on a fixed block railroad.

The variable block system, it was found, did permit us to maintain closer headways—not much closer, but closer than the fixed block system. Then another factor showed up. The fixed block system permitted close headways to be established immediately. Whereas with the variable block system we had to insert or run a considerable number of trains in the system before the minimum, optimum headway could be obtained. The study was developed for rapid transit operations, where we were working with uniform, transit type equipment requiring minimum headways at 80 miles per hour. That's why our BARTD test demonstrations are using the fixed block principle.

Fixed blocks have, in the past, implied insulated joints. But our new railroad is almost certain to use continuous rail to its maximum advantage —and cutting rail for insulated joints is a condition to be avoided. Further our new railroad may well use electric propulsion—or be economically convertible to electric propulsion. Thus we shall want both rails available as traction current return paths.

The solution, obviously, is the establishment of a continuous series of fixed detection zones that require no insulating joints. This is what we are doing on the BARTD project. The separation effect is secured not by mechanical insulation but by the inherent attenuation characteristics of high frequency circuits. In addition, the wealth of frequencies available within the audio spectrum permits establishment of fixed detection zones by using different frequencies for adjacent zones. Further, the use of the rails themselves as a detection medium gives us important advantages in transmitting information to the trains. Rail-to-train transmission in a specific detection zone ensures that the information is restricted to the specific train for which it is intended. The shunting of the track circuit prohibits the

passage of the information to following trains. Messages received with improper address can be ruled out in a failsafe manner.

High frequency circuits also permit us to use a wide range of modulating signals so we can transmit a correspondingly wide range of information to the trains. This becomes an important advantage because our new railroad must be readily amenable to any of various stages of automatic operation.

For the really high-speed line with trains running on close headways, reaction time of all systems is important. At 180 mph, a train moves over 250 feet every second. Proper decisions, proper encoding of commands, and proper decoding of messages, on the trains, require checking and crosschecking. Such checks must be performed fast. At 250 feet per second, electronic system speed is a necessity.

Our discussion of the train separation system has lead us into the closely allied area of ATO, of Automatic Train Operation, an accepted requisite for our new railroad if we are to keep efficiency up and costs down.

What do we mean by Automatic Train Operation? In a technical sense, it is automatic control of the brakes and motors.

These, briefly, are the goals, the objectives, of ATO:

1. Control of headway, including precision stopping, particularly for passenger service.
2. Better, smoother, train handling.
3. Fuel economy.
4. Economical use of manpower.
5. Increased operating flexibility. For example, precision maneuvers for loading and unloading under ATO can be applied to unit trains.

There are three levels of complexity for an ATO system:

1. Completely automatic.
2. Pushbutton start and stop.
3. Pushbutton speed selection.

With the computer-oriented controls we have already outlined, our new railroad would be ready for complete automation. The trains would be told when to go, where to stop. So let us concentrate our attention then on how they will respond to the start and stop commands.

The BARTD automatic train operation system is an example of a continuous feedback control system. In the GRS embodiment there are three modes of operation: (1) constant speed, (2) constant acceleration, and (3) programmed station stop. In the case of the constant speed mode, the control system adjusts the tractive effort to the value which will maintain a constant velocity level within prescribed tolerances. In true feedback fashion, the velocity is measured, and an error signal is generated which is essentially the difference between the called-for or reference velocity and the measured or actual velocity. The train power unit knows at all times how close or how far away its performance is from a desired level.

If the called-for velocity is greater than the actual, the tractive effort is increased at a rate that is proportional to the error. Conversely, if the reference level is less than the actual, the tractive effort is decreased. Of course, if the error is zero, the level of the tractive effort is unchanged. Smooth performance, better than manual results.

Because of the inherent delay in the response of the traction system, particularly the brakes it is necessary to modify the simple concept just described. It is necessary indeed to cause the control circuit to anticipate the response of the traction elements, (that is motors and brakes) by including the acceleration in the error signal. Thus, if the error is large but is rapidly being corrected, the control signal is reduced below what it would be if the error were remaining essentially constant, for example when calling for a speed beyond the capabilities of the power units for the load and grade.

In the programmed station stop, the operation is similar to that of the running condition. The called-for velocity in a stop program decreases as the vehicle approaches the target stopping point. This reference velocity for each position of the vehicle is such that the deceleration is constant. This reference is generated on board the vehicle by counting the number of turns of the axle following the passage of a station stop marker. The relative sophistication of the BARTD control system is the result of the requirement that the train come to a precise stop in a minimum of time—and comfortably for the passengers.

As a basis for comparison, it is useful to consider a simpler "definite-correction" (sometimes called a "bang-bang") servo system as exemplified by the Carol Mine System. There is basically only one operating condition, the running mode. The difference between this reference velocity and the actual velocity is the error signal which, however, cannot assume a continuous range of values, as in the case of BARTD, but only a discrete set. For example, if the reference level is thirty miles an hour, the circuit determines only whether the actual speed is below 29½, between 29½ and 30½ miles per hour, or above 32 miles per hour. Tractive effort is controlled in steps, and there is no attempt to take into account how fast the correction is taking place—that is to say, the acceleration is not used in the control. This system is well suited to perform its required task.

The continuing tests of the BARTD automatic train operation system will give us more background data for determining what practical advantages can be obtained from using a continuous feedback system and under what circumstances this relatively complex system should be used on mainline operation.

Thus automatic train operation for our new railroad means the automatic control of the tractive effort exerted by the train. Or simply, automatic train operating equipment is the "black box" that operates throttle and brake handle in place of the engineman.

To summarize, here are its advantages:

1. Freedom from human reaction time. It is the inconsistency as well as the magnitude of the delay that makes the human being a poor performer.
2. Automatic traction control equipment is compatible with and understands the language of the centralized logic machines (digital computers) that will control the total system. It eliminates a man-machine interface.
3. ATO makes possible precision station stops with a minimum loss of time. For the management of passengers on platforms it is desirable to make such precision stops.
4. It reduces reliance on human judgement.
5. It offers smoother handling of trains and hence reduced damage to equipment and lading.

When the opportunity first presented itself to speak here, I was seriously tempted to daydream and use an "If-I-knew-then-what-I-know-now" theme. How enjoyable it would have been for each of us to contemplate what he would do today with a brand-new, fresh from the ground up railroad like the Tokaido Line—I assure you it would be different.

We do not need to start from scratch . . . indeed we do not have time to do so. Fortunately, the advanced operations control facility described, can be put into effect, without undue disturbance, and utilizing much of what we already have, on your railroads today.

We know what the overall control facility should be for our "new" railroads. We already have the major techniques available now for assembling that facility . . . in total or in modular, building block steps. And, the railroads now have the capabilities in their personnel.

All we need is the signal for positive tractive effort.

LOCAL LODGE NEWS

By, for and about B. of R. S. members

Pennsylvania

BELLWOOD, PA. (1). Our regular meeting was held August 27 at Huntingdon, Pa. The opening prayer was delivered by Brother R. Mohr and the minutes of the previous meeting were read and approved.

Local Chairman R. A. Meyer reported on his meeting of August 13 with our new C&S supervisor. It was pointed out that the question of who would maintain hotbox detectors was settled and the assistant signalman position in the C&S offices was discussed.

Brother Meyer also reported that Brother R. C. Sprankle's claim has been satisfactorily settled and that joint submissions have been prepared and submitted on two other claims.

The possibility of "Gang Maintenance" was also discussed.

A motion was made and passed to cancel our plans for an annual picnic.

It was reported that only one member, Brother C. M. Pope—maintaner "FA" testboard, is off work due to illness.

Brother H. R. Davis reported on activities regarding plans for our forthcoming banquet and a motion was made and passed to honor our Brothers and retired supervisor W. W. McMichael and hold this banquet on October 8. C. D. McClellan

Missouri Pacific

SEDALIA, MO. (72). Our regular meeting held at the Claridge Hotel, St. Louis, Mo., on August 14, was opened with prayer by Brother G. W. Holmes. There was one officer and four members present.

The minutes of the Little Rock, Arkansas and the Sedalia, Missouri meetings were read and accepted.

Mr. Donald Wayne Taylor was accepted as a new member.

Brother Eugene Grayson was reported sick.

Motion was made and passed to concur with the Little Rock, Arkansas meeting to approve changes to our Brotherhood's Constitution as proposed by our Executive Council.

There was a general discussion on various subjects and it was announced that Brother F. E. Bush will soon retire and Brother C. S. Warden, vice general chairman, will assume the duties of the general chairman.

Our regular meeting held at the St. Francis Hotel in Monroe, La. on September 11 was attended by 8 members and three officers. The meeting was opened by the recording secretary and Brother F. F. Crane chaired the rest of the meeting. He explained that due to Hurricane Betsy the men on the south end were busy clearing signal trouble and could not be present for this meeting.

The minutes of the Sedalia and St. Louis, Missouri meetings were read and approved.

The applications for membership presented by E. W. Taylor, Milton F. Scott, W. L. Pratt, Ted Winter, and V. E. Borowitz were read and accepted.

A motion was made and passed to ask Grand Lodge's assistance in working out some system to determine how much signal equipment a man should be required to take care of. It was suggested that a unit count and mileage be taken into consideration in making this determination. It was the opinion of some present that something must be done regarding the overloading of men on maintenance territories.

A motion was made and passed requiring the General Chairman to have the consent of the Local before making any agreement with management.

Brother Harper proposed that our Local eliminate regular meetings as they accomplished nothing and impose an unnecessary expense on the Local. The motion carried.

The members present asked that Vice President C. S. Chandler be extended a personal invitation to attend the next meeting held in Monroe, La.

The meeting adjourned at 12:50 p.m.

G. W. Holmes

P. R. R. — P. R. S. L.

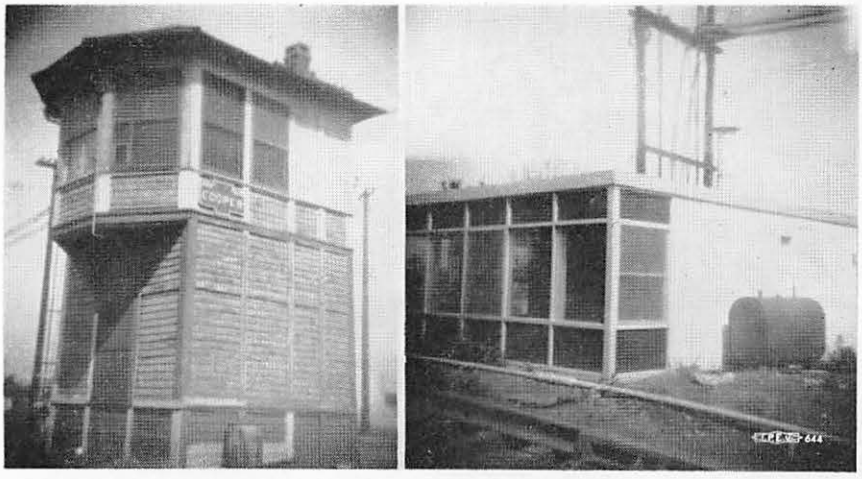
MAGNOLIA, N. J. (58). Our regular meeting was held August 11 at Hammonton, New Jersey.

Brother G. L. Henry reported on claims from the Atlantic District and the Penna. Reading Seashore Lines. He also reported on claims regarding prewired cases that had been denied by the N.R.A.B.

The Brothers present approved the proposed constitutional change to Section 151, Article I as set forth in a letter dated June 9, 1965 on action recommended by the Grand Executive Council and Grand Board of Trustees and submitted for a referendum vote of the Locals.

The membership was brought up to date on the case of Brother J. C. Davis who had not been returned to duty after being off sick.

Our retired Brother Hummel has had another operation on his eyes, also,



Cooper Tower — The Old and the New

Brother S. McHugh is back to work after recovering from a broken leg.

Photos will accompany this article showing the old Cooper Tower and the new one that will replace it after October 1965. The next Tower that will go is Center. Allen Tower has already bit the dust. These towers, Allen and Center, will not be replaced. What does this mean? Two maintainers also go.

We regret that there are so few members who are interested in their own welfare and attend meetings. Don't forget fellows, what goes on at these meetings involves your bread and butter and we urge you to be at our next meeting on October 13.

Those present were: Henry, Gilbert, Coho, Reed, McCormick, R. W. Schwartz, R. B. Inman, J. Nack. There was no one present to represent the Alantic District but your Secretary. You are only hurting yourself by not attending.

George Dooley, one of our members of the Atlantic District retired August 1. We wish him the best of luck. George has been maintainer at Center Tower for the past few years.

The Yardmaster's office at State St. and the Crew shanty at 27th St. will be torn down on August 25. That will mean the loss of 6 telephones, radio, loud speakers, teletalks. The dispatcher's lines will also be removed and there are to be no replacements.

Brothers Howe and Whalen were inducted into the Services on August 10 and we wish them the best of luck.

Please pay your dues before the end of the month. Plan your payment so it will reach your treasurer before the 30th. J. L. NACK

Chicago & Western Indiana

BROOKFIELD, ILL. (32). On Friday, August 20, a special meeting was held. Immediately following the meeting, a retirement party was held for Brother Fred Hudson who retired July 30.

We were honored to have President Jesse Clark and Grand Lodge Representative W. Altus with us.

Brother Fred Hudson

Brother Rickert read a letter addressed to Brother Hudson from C. Ross, signal supervisor, who was unable to attend the party. Brother Clark presented Brother Hudson with his Honorary membership card and mentioned that Brother Hudson attended the Local's meetings faithfully for many years.

Chief Alberts presented Brother Hudson with a billfold and a check from the members of Local 32. Brother Hudson served our Local as Chaplain for many years. He was day maintainer at the 47th St. interlocking plant at the time of his retirement. Brother Hudson will be missed around 47th St.

Of the Local's 30 members, 22 were present to make the evening a joyous one for Brother Fred.

Brothers Schuh, Sowa and Bulthuis who were members of our refreshment committee did a wonderful job. Everyone that attended enjoyed themselves very much.

The next regular meeting will be held on October 22 at 8 p.m. at the Charles Gerhardt Hall, 5159 S. Bishop St. An election will be held for a Chaplain and for a member of the Grievance Committee. EDWARD E. RICKERT

Members of Local 32 and other friends are shown as they posed for a photo when they met August 20 to honor Brother Fred Hudson who had recently retired.

B&O-SIRT-WM

CONNELLSVILLE, PA. (31). It is important that employes upon being furlouged (whether protected under the February 7, 1965 Agreement or not) register their name and address and availability for work under Rule 32, since failure to do so may result in the loss of paid holidays or other benefits.

Brother Denzil Sayers, maintainer, Clarksburg, W. Va., Monongah Division, passed away August 8, 1965 of a cerebral hemorrhage. A long time member of our Brotherhood, we extend to his family our sincere sympathy at his passing.

Brother R. E. McDaniel who has been off duty for some time, resumed work as Leading maintainer at Cairo, W. Va., Monongah Division, on August 8. We are glad to see him out and about.

Buffalo Division: Brother J. E. McCullough's wife passed away during the month of August. We extend our deepest sympathy to the family.

Brother R. B. Fleming's father passed away during the week of August 8 and we extend our deepest sympathy.

Brother J. R. Mauthe who was injured during February has recovered and returned to duty on August 23.

J. W. Briggs of the Pittsburgh West End Seniority District has entered the signal engineer's office for supervisory training. DALE LEONARD

Great Northern

WHITEFISH, MONT. (154). During July, while checking grounds at the Dog Bay crossing on Whitefish Lake, I had the good fortune to meet Wylie Brown, a fellow signal maintainer from another road. Brother Brown, of the Nebraska Div. Union Pacific Ry., saw me working and stopped to say "Hello." He said he was stationed about 80 miles east of Cheyenne. We had quite a visit. It is interesting to exchange ideas and information with someone from another road.

Frank R. Tate, signal maintainer at Harrington, Wash., retired on September 1 after 45 years of service. He started his railway career working for the Northern Pacific and the Great Northern in the summers of 1915-'16-'17 as a section laborer under section foreman Mat Onsun for the N.P. and George Peterson for the G.N.

In 1920 Brother Tate started his signaling career with the G.N. at Minneapolis under Foreman Tom Flang, and then transferred to L. T. Harris' gang at Glydon, Minn. He later moved with this gang to Moorhead, Minn., Grand Forks, N.D, then to Leavenworth, Skykomish, and Wilson Creek, Wash. In 1923 Frank went to Harrington as signal maintainer, and has now retired from that job. Many long and happy retirement years, Frank!

Gangs on the West End are busily installing about 60 miles of C.T.C. around Columbia River, respacing signals and interlockers, and extending

Local 55's Annual Picnic is a place where good friends meet, children have fun and good and faithful Brothers gather to discuss the affairs of Signalmen.

sidings. John Gilbert's Gang 20 has been at Belton, Mont. for the last two months, and are now moving to Troy, Mont.

Tom Ridenour's Gang 19 has been making extensive signal changes around East Glacier, and are now moving to Essex, Mont.

Alan Wilson's Gang 16, Butte Div., are at Great Falls, Mont. Walter Watson, furloughed on the Minot Div. went to work as asst. signalman in Gang 20 at Coram, Mont. on September 7.

Melvin Schwede, furloughed on the Minot Div., went to work as signalman helper at Culbertson, Mont. on Sept. 7.

Felix Vogel, furloughed on the Minot Div., went to work as signalman helper on Gang 19 at Glacier Park, Mont. on September 7.

ADRIAN L. BUCKLAND

Wabash

DECATUR, ILLINOIS (55). Our regular annual "Signalman's" Picnic was held this year near New Haven, Indiana. It was difficult to get an exact count on the members and friends who attended but we know there was between 65 and 70 present. There were so many things to do and so many people to visit that everyone appeared to be on the move.

President Jesse Clark, Grand Lodge Representative W. W. Altus, and Nickel Plate General Chairman John Chatlosh were present. Brother Altus explained that E. L. Abbott, editor and manager of *The Signalman's Journal,* was unable to attend because of a prior commitment but had asked that photos be taken of the festivities to accompany our article.

There was plenty of food and refreshments, catered from Fort Wayne, Indiana to serve two meals. We note that every one seemed to enjoy this service. Even our women folks, who in the past have been kept busy preparing and serving the food, had time to chat and actively participate in the entertainment.

Everyone had an opportunity to renew old acquaintances and meet our new people. We sincerely hope that our annual picnic can be continued throughout future years. It is a wonderful opportunity to build lasting Brotherhood and fellowship among our widespread membership.

We must also mention that some of our retired members were present. Honored guests included Brother and Mrs. Bailey of Stonington, Ill. and Brother Hobart.

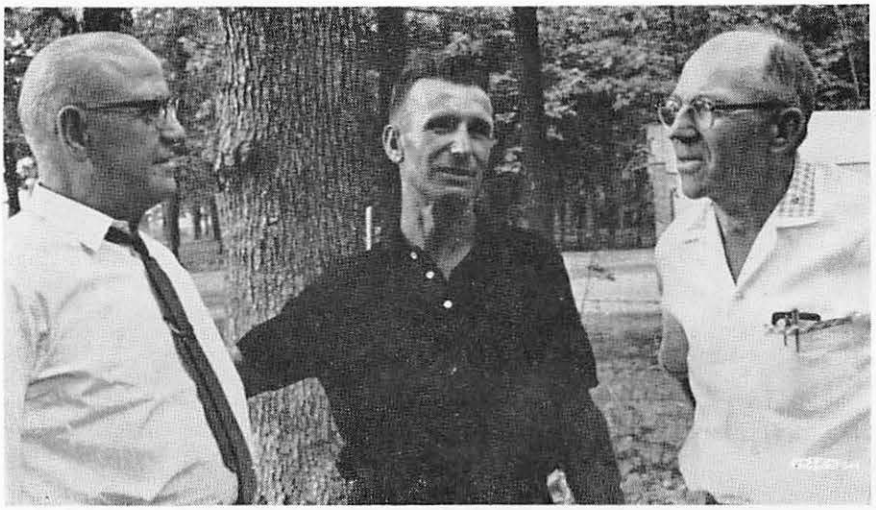
It was recently reported that Brothers Harlow Cook and O. C. Stillwagon recently retired. We wish them both many years of happy retirement. Brother Cook has over 40 years of signal service with the Wabash and Brother Stillwagon has been with us since 1939.

With the gangs: Both J. F. Lawrence's gang and W. B. Ritchie's gang are at Lafayette, Indiana working on a flasher job. P. E. Dawson's gang is at Poag, Ill. on a gate job.

With the testmen: F. G. Bartley is at Forrest, Illinois; J. W. Sharp is on the old Montpelier, Ohio district; H. E. Martin is on the Peru, Indiana district; R. E. Petus is working between Moberly, Missouri and St. Louis Missouri; J. E. Bartley is working between Moberly, Missouri and Kansas City, Missouri.

Personnel changes: W. B. Ritchie has bid in the foreman job on Gang 901; W. S. Yarbrough has bid in the signalman position in the shop at Decatur,

Members of Local 55, their families and friends, are shown as they assembled for lunch during their Annual Picnic.



President Jesse Clark, right, Brother S. L. Martin, center, and General Chairman J. F. Poundstone are shown as they paused during picnic activities to discuss Brotherhood affairs.

Ill. vacated by W. B. Ritchie; Dudley Plummer has bid from his position at Romulus, Michigan to the maintainer position at Milan, Michigan.

With the sick: Brothers Ray Tuley, W. F. Newman, and J. F. Driskill are off duty due to illness. We wish them a speedy recovery.

"Where there is vision, people prosper even in the midst of crisis and depression." JFP

Reading

PHILADELPHIA, PA. (53). Our picnic held on August 14 at Warminster Park was a great success. Everyone that came had a swell time. We were all glad to see 6 of our retired brothers on hand. They were John Kershner, John (Cap) Hutter, Frank Bradley, Waldo Reustle, Jimmy Reustle, and Howard Lukens.

Bob Trumbauer's Bean Bag game made a big hit with everyone. There were a lot of laughs watching them try to throw the bag in the hole. We were glad to see Les Sine who maintains the Bethlehem section. We don't see much of the fellows on these way out sections.

In the game of Quoits, Johnny Righter, Jr. and Joe Fiori had ringers. Johnny and Chris beat out Joe and Earl Lyons in a close game. Then Bob Trumbauer and Tom Pollock won over John and Chris. The others that enjoyed themselves were Stanley Freed, John Righter, Sr., Rudy Mummel, Richard Lodholz, Pat Cavallaro, Silvi Dalessandro, Fred Roth, John Destolfo, Bob Maag, and Mike Perzel and everyone's family. Next year we'll hope to see more come out.

Brothers, here is a reprint of the letter received from Charlie Harrison:

"Many thanks for the invitation to the picnic. It was kind of you to remember us. It is 37 miles from our house to Palmyra Bridge and then some more miles to the picnic grounds. Go ing both ways it would be about 120 miles and my wife and I think we had better not make the trip in the Saturday traffic. Chris, I read your Local 53 write up in the Journal. It was also good to see the picture of Joe's gang. I knew those fellows when they were young. Did they shave off their beards for the picture? Well, Chris, you folks have a good time and remember me to all."

We were all glad to hear from him but were sorry he could not make the picnic. CHRIS FINK

The two Brothers shown here enjoying a cold one are John Gersner and John Hutter.

This group picture shows Brothers Waldo Reustle, Frank Bradley, and Howard Lukens—standing. Jimmy Reustle and John Hutter are seated.

B&O-SIRT-WM

CONNELLSVILLE, PA. (31). Our regular quarterly meeting held recently in Washington, Pa. was chaired by Chief Signalman B. L. Cowgill. The regular order of business was conducted as usual. The meeting was not well attended.

We should all remember that our Brotherhood is a democratic organization where each man's vote counts and is important. One must attend the meetings to voice his opinions and should not sit back and squawk about decisions made in his absence.

Our next meeting will be held in Clarksburg, W. Va. on Saturday, October 16, 1965 at the Gore Hotel, Pike St. Please attend.

All members who are protected employes under the Feb. 7, 1965 Agreement and who may be furloughed, should notify the Local or General Chairman at once of such furlough, stating the facts, so that a claim may be made in their behalf in the event the facts of the case warrant such action.

Agreement has been reached on the co-ordination and abandonment of B&O-C&O signal facilities in the Huntington-Renova, W. Va. area. Maintainer W. E. McElfresh of Huntington has elected to sever his relations with the B&O upon the completion of 16 monthly payments by the company subsequent to vacation pay and the construction and salvaging of crossing protection in the area. A helper's position will be established at Parkersburg, W. Va. for at least five years from July 1, 1965.

James Robinson retired July 30, 1965 and was presented a transistor radio by his friends and fellow employes. Good Luck, Jim.

Baltimore East End: The B&O has been granted ICC approval to abandon a portion of its Childs Branch.

Cumberland Division: Brother D. B. Grove's gang is at Orleans Rd., W. Va. installing Traffic Control on 17 miles of double track between McKenzie-Miller and Orleans Road, W. Va.

DALE LEONARD

C. N. — C. P.

WINNIPEG, MAN. (12). Our regular meeting was held on July 10 at the Union Centre. After the meeting was properly opened Grand Lodge Representative A. N. Cotton assumed the chair at the request of Chief Signalman L. E. Young.

Members present were Brothers R. L. Law, B. Popel, G. Hutchison, C. W. Maycock, G. S. Machtigalt, L. D. Hedley, A. Lapointe, P. Kanski, W. Alexander, G. Jenkinson, R. Jablonski, J. C. Platt, K. L. Reitter.

The minutes of the previous meeting were read and accepted.

Brother M. Shewchuk was accepted as a new member of our Local.

Grievances—The question of Board for C.N.R. and C.P.R. employes is being progressed through Montreal headquarters. This is a system wide problem.

In regards to employes receiving expenses for noon-day meals, it was suggested that a grievance be submitted so that this matter can be properly progressed to a conclusion.

In regards to snow removal grievances in the Mountain Region, the claim has been refused. It will have to be taken to a referee in the Prairie Region, Winnipeg Area. One claim has been paid but several others have been turned down and the Company is taking the position that switches not working creates an emergency. Efforts in this matter are continuing.

There are grievances pending regarding time for traveling on the gangs on week-ends, and time claimed while traveling from one gang to another.

Report of Special Committee — Arrangements have been made to hold a Smorgasbord and Dance on Saturday, October 30 at the Concord Hotel, Notre Dame and McPhillips. After considerable discussion, it was agreed to set the price at $3 per person.

Brother Cotton mentioned that the Canadian General Committee meeting will be held in Winnipeg in the early fall of 1966 (Sept.) and that we will hold our banquet at that time.

Brother Law suggested that the committee begin arrangements for this function immediately so as to have the best possible location.

As a result of communications between Brother Wood, President Clark and myself, Brother E. G. Wood has been awarded a 25 year continuous membership pin. Brother Cotton read a letter concerning meetings of the Ca-

nadian General Conference Committees to present new demands to the railways, as our present contract expires on December 31, 1965. A motion was made and passed to present the following recomendations for consideration by the Committee:

- Board on gangs will be paid by the Company.
- A substantial increase in wages to bring us in line with the durable goods standard
- Accumulative sick pay
- Improved vacations—4 weeks after 15 years—3 weeks after 10 years

A discussion was held on the effects the Canada Pension Plan will have on Signal employes.

The question of how the Canada Labour Code will affect the 205 1/3 hour agreement is being looked into by the General Negotiating Committee and the Railway Companies.

Brother Law read a letter from President Clark regarding proposed changes in our Constitution. A motion was made and passed to support the recommended changes.

It was reported that the C.N. proposes to make changes in the Signal Department Training Programme. The teaching of electricity will be done by "Programme Learning" and will be used in tours 1 and 3. This system is presently used by the Hydro and Telephone Companies.

As Brother Hickson has been promoted to a non scheduled position, elections will be held to fill vacancies as C. N. Local Chairman and one position on the grievance committee.

Please keep in mind Saturday, October 30, when we will hold our Smorgasbord and Dance at the Concord Hotel. Tickets should be available shortly from Brother Jablonski — ED 4-1153, Brother Jenkinsen—233-2889, and Brother Popel—ED 4-5685. R. L. Law

Baltimore & Ohio

DAYTON, OHIO (94). Toledo Division: D. H. Kelley and gang are at Ottowa, Ohio modifying the signal system between Cario and Leipsic, Ohio where the DT&I intends to operate over the B&O.

H. L. Anderson, signal supervisor on the Ohio Division, has resigned from the B&O and is now working for the RACO Company.

Hotbox Detectors are to be installed on the Chicago Division at Standly and Bascom, Ohio and at Alida and Cromwell, Indiana.

All members are urgently requested to attend the next meeting to be held in the Durbin Hotel at Rushville, Indiana on Saturday, October 16, 1965.

G. F. Hammond

P. R. R. — P. R. S. L.

MAGNOLIA, N.J. (58). Our regular meeting was at Hammonton on September 8.

Local Chairman George Henry read a letter involving a brief prepared by the Railroad Labor Executives' Association. He also read a letter from the Delaware River Port Authority regarding the High Speed Line Extension. There was a discussion of pending claims and our Brotherhood's position on pre-wired cases.

The members discussed the use of cranes by track gangs to pull poles after signal wires had been removed. We think this is wrong and this is our work under the scope rule.

Brother R. Newman visited us at this meeting. We are sorry to report that Brother Frank Colbourn died August 31.

The following Brothers were present for this meeting: C. Capone, G. Henry, W. Gilbert, R. McCormick, W. Coho, J. Nack, R. W. Schwartz, H. Kendall, R. Sigmund, H. McNemar, E. Reed, R. Inman, W. Gifford, and R. Newman.

Please don't forget to pay your dues and the assessments. We look forward to seeing you at our next meeting on November 10 at 8 p.m. We would like to see more of our Atlantic District men at the meetings.

We welcome Brothers Ray Miller, asst. foreman, and maintainer A. H. Dworanczyk, to our team. Brother D. Brunell was also advanced to asst. signalman. Two new men, O. C. D'Angelis, and D. P. McIntyre, are on our districts and we extend our sincere welcome.

Your Secretary was appointed to collect for the United Fund this year. We don't have a report, as he did not start until October 4. We hope you will help him out as you did last year. Thanks.

Correction—It was reported in our August *Journal* that Junior Engineer was acting inspector. Wince Welsh was acting inspector, C&S, while A. F. Ott was on vacation. J. L. Nack

Rock Island

MARENGO, IOWA (183). Our regular meeting was held in the Rebel Motel at Iowa City on August 22.

The meeting was called to order by Chief Signalman Jim Hickerson. Brother J. P. Ward handled the financial secretary's position very well in the absence of H. E. Clark who was vacationing in Idaho. There were 6 members present plus Grand Lodge Secretary-Treasurer C. J. Chamberlain; General Chairman R. A. Watkins from El Reno, Oklahoma; G. R. Geontzel, signal inspector from Chicago office; and F. Kinney, retired maintainer from Iowa City.

Our recent dues increase and the F.E.C. strike situation were discussed to some extent and Brother Chamberlain very ably answered all questions and comments raised on the subject.

Some of our signalmen are traveling to and from meetings in a more modern fashion. Jake Goentzel and Bob Dilts flew to the meeting with our flying signalman Jim Hickerson of Moline. Sonmeon said one of these days we may be using helicopters when maintaining signals.

Retired members who recently visited our Silvis Signal Shop are: H. Jensen, signal engineer from Joliet; Charles St. Johns of Glendale, Calif.; L. W. Schildmiller of Phoenix, Arix.; Kelly Johnson of Sheffield, Ill. and Leo Burke of Geneseo, Ill. All look hail and hearty. Come see us again, boys.

V. A. Drury was appointed Local Chairman. A special meeting will be called during the latter part of September to elect a permanent local chairman and consider a dues increase.

L. E. Fort, signal supvr. of the Des Moines Div., retired July 31 and F. V. Laverty, signal supvr. of the Rock Island Div. retired August 31. We wish them many years of retirement.

G. .M. Cullum

Obituary

Ora D. Carpenter, retired member of Local 73, Pennsylvania Railroad, passed away recently. He was 71.

Brother Carpenter was signalman on the Fort Wayne Division at the time of his retirement April 1, 1959 after completing 34 years of service.

The officers and members of Local 73 extend deepest sympathy to the surviving members of his family. ED.

John A. Daley, retired member of Local 48, Pennsylvania Railroad, passed away recently. He was 70 years old.

Brother "Pete", as he was known, began his railroad career on the old Central Division as a laborer in October, 1913. He served in the Army in France during World War I and then returned to the Signal Dept. on the Maryland Div.

He was promoted to signalman in May 1927 and worked in various positions until poor health forced his retirement on September 22, 1949.

Brother Daley is survived by a son and a daughter to whom the officers and members of Local 48 extend sincere sympathy. T. E. ALBRIGHT

August Keller, retired member of Local 16, Pennsylvania Railroad, passed away August 3, 1965. He was 70.

"Dutch" as he was known by his many friends, retired May 18, 1956 after completing more than 27 years of service. At the time of his retirement he was a signalman in the Shop at Logansport, Indiana. He had been an invalid the past 9 years.

The officers and members of Local 16 extend deepest sympathy to his widow and other surviving members of his family. ED.

Fred S. Bailey, retired member of Local 48, Pennsylvania Railroad, passed away recently after a lengthy illness.

Brother Fred started his career on the Pennsy at Seaford, Del. as a signal fitter and worked at various positions and locations on the Del Marva Div. until he became an inspector C&S. He retired on February 1, 1953.

The officers and members of Local 48 extend deepest sympathy to his widow and other surviving members of his family. T. E. ALBRIGHT

Charles W. Collins, retired member of Local 48, Pennsylvania Railroad, passed away recently. He was 71.

Brother "Charlie" started his signal career as a yard laborer at Perryville, Md. in 1908. He held various positions from helper T&S to asst. supervisor. T&S. At the time of his retirement in 1957 Charlie held the position of Inspector C&S at Perryville, Md. After 49 years of service, he retired to St. Petersburg, Fla.

The officers and members of Local 48 extend deepest sympathy to his widow and other surviving members of his family. T. E. ALBRIGHT

Whitman James, member of Local 154, Great Northern Railroad, was killed July 16, 1965 when struck by No. 31, passenger train, about 1½ miles west of Priest River, Idaho, while out shooting a case of trouble that evening.

Brother Whit was born January 12, 1923. He entered the service of the Signal Dept. of the Great Northern on October 11, 1950, as a signalman helper. He was working as relief signal maintainer at the time of his death. His regular position was that of Signalman on Gang No. 20, Kalispell Div. A Memorial Fund was collected among his fellow employes and presented to his family.

The officers and members of Local 154 extend our deepest sympathy to his widow and his family.

A. L. BUCKLAND

Norman E. Barg, member of Local 32, Chicago & Western Indiana Railroad, passed away August 31, 1965. He was 48.

Brother Barg had been active in Brotherhood affairs and was serving as General Chairman of the Grievance Committee at the time of his death. He was Third Trick System Maintainer.

During World War II he served with the Army Engineers. Most of his time was spent in the Pacific Theatre.

He is survived by his widow; a son and a daughter, also his brother, Melvin, who at the present time is a signalman in the Inspection and Test Crew. His son-in-law, Donald Rance, is an Assistant Signalman in the Inspection and Test Crew.

The officers and members of Local 32 extend deepest sympathy to the surviving members of his family.

E. R. RICKERT

Merrill A. Wood, retired member of Local 92, Southern Pacific Railroad, passed away recently. He was 91.

Brother Wood began his signaling career on the Sacramento Division of the Southern Pacific August 22, 1905. He retired September 1, 1940 from the Western Division where he was signal maintainer at Pittsburg, California.

The officers and members of Local 92 extend deepest sympathy to the surviving members of his family. ED.

James Redhead, retired member of Local 122, Canadian Pacific Railroad, passed away recently. He was 76.

Brother Redhead was signal maintainer at Agincourt at the time of his retirement January, 1954, after completing 37 years of service.

He is survived by his widow to whom the officers and members of Local 122 extend deepest sympathy. ED.

Thomas J. Finn, member of Local 57, Lehigh Valley Railroad, passed away July 31, 1965. He was 62.

Brother Finn was working as a leading maintainer at Oak Island Retarder Yards, Newark, New Jersey.

He is survived by his widow, to whom the officers and members of Local 57 extend deepest sympathy.

GEORGE W. CASHAU

Charles Ray Johnson, retired member of Local 154, Great Northern Railroad, passed away August 5, 1965 at Carlin Bay, Idaho. He was born August 2, 1896 at Fargo, North Dakota.

Brother Johnson worked for the Great Northern as Signal Maintainer on the Cascade Div. at Berne, New Westminster, and Quincy, Washington, retiring from there August 2, 1961 after completing 39 years of service.

He is survived by his widow to whom the officers and members of Local 154 extend deepest sympathy.

A. L. BUCKLAND

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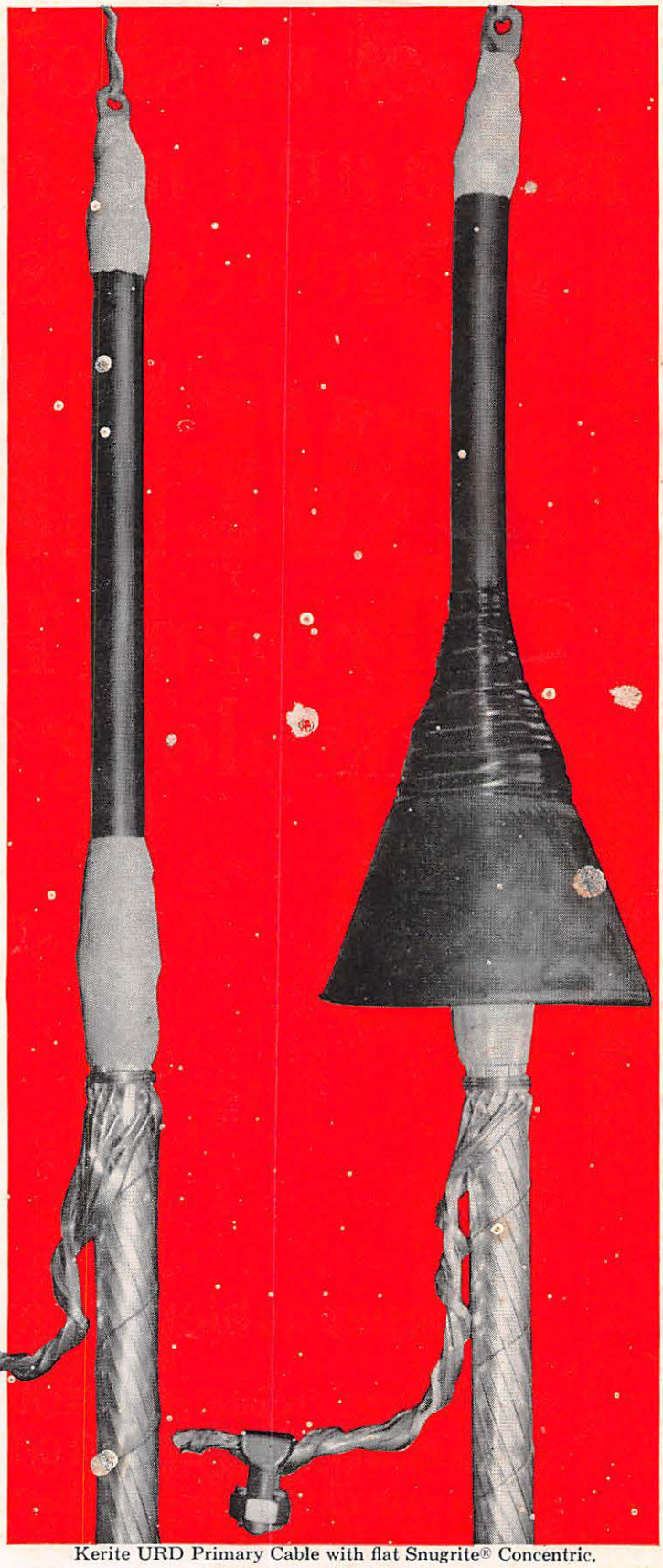

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